Advant® OCS

Advant Plant Explorer

Version 1.0

User’s Guide

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TABLE OF CONTENTS

Chapter 1 - Introduction

1.1 About this Book 1
1.2 Product Overview....2
1.2.1 General User Interface 2
1.2.1.1 Using Buttons and Menus 5
1.2.1.2 Using the Mouse....5
1.2.1.3 Drag and Drop 5
1.2.2 What You Can Do with Advant Plant Explorer 6
1.2.2.1 Creating Objects 6
1.2.2.2 Creating Aspects....7
1.2.2.3 Building Structures....8
1.2.2.4 Searching for Objects 8
1.3 Related Documentation....9
1.4 Conventions....9
1.5 Terminology 11

Chapter 2 - Installation

2.1 Installation Procedures....13
2.2 Product Verification 13

Chapter 3 - Configuration

3.1 Getting Started....15
3.1.1 Configuration User Interface....15
3.1.2 Application Start-up 16
3.2 User Profiles for Advant Plant Explorer 16
3.2.1 Configuring Aspect Filters....18
3.3 Objects....20
3.3.1 What Is an ABB Object?....21
3.3.2 Object Tree View Window....21
3.3.2.1 File Menu....24
3.3.2.2 View Menu 24

CONTENTS (continued)

3.3.2.3 Tools Menu........24
3.3.2.4 Window Menu........25
3.3.2.5 Help Menu........25
3.3.2.6 Temporary Root and Structure Selector........25
3.3.2.7 Temporary Root up Button........25
3.3.2.8 New Object Button........25
3.3.2.9 Preview Toggle Button........25
3.3.2.10 Aspect Filter List........26
3.3.2.11 Aspect Filter Configuration Button........26
3.3.2.12 Aspect List........26
3.3.2.13 Preview Area........26
3.3.2.14 New Aspect Button........26
3.3.2.15 Find Tool Button........26
3.3.2.16 Message Window Button........27
3.3.3 Object Tree Context Menu........27
3.3.3.1 Object Property........30
3.3.4 Creating an ABB Object........33
3.3.4.1 Object Types........33
3.3.5 Inserting an ABB Object........38
3.3.6 Cut/Copy/Paste........40
3.3.7 Moving an ABB Object........40
3.3.8 Deleting ABB Objects........41
3.3.9 How to Create a New Object Type........41
3.3.9.1 Create Info Page........42
3.3.9.2 Aspect Control Page........44
3.3.9.3 Category Control Page........46
3.3.9.4 Child Control Page........48
3.3.9.5 The Object Factory Aspect Category........49
3.3.10 Object Type Example........50
3.3.10.1 Create Info Page........51
3.3.10.2 Aspect Control Page........52

CONTENTS (continued)

3.3.10.3 Category Control Page 52
3.3.10.4 Child Control Page 53
3.3.10.5 Workplace Structure Root Object....54
3.3.10.6 Workplace Object Type Instances 55
3.4 Aspects 55
3.4.1 What Is an Aspect?....55
3.4.2 Aspect Context Menu....56
3.4.2.1 Aspect Property 57
3.4.3 Creating an Aspect 63
3.4.4 Copying an Aspect 65
3.4.5 Editing an Aspect 65
3.4.6 Overriding an Aspect 65
3.5 Building Structures....65
3.5.1 What Is a Structure? 66
3.5.2 Creating a Structure....66

Chapter 4 - Operation

4.1 Getting Started....71
4.1.1 Application Start-up 72
4.2 Working with the Object Tree 72
4.2.1 Main Object Tree Window 72
4.2.1.1 Temporary Root and Structure Selector 74
4.2.1.2 Temporary Root up Button....74
4.2.1.3 Find Tool Button....74
4.2.1.4 Preview Toggle Button 74
4.2.1.5 Aspect Filter Selector 74
4.2.2 Browsing a Structure....74
4.3 Setting a Temporary Root 76
4.4 Aspect Filters 78
4.5 Views and actions....78
4.5.1 View Selector 79
4.6 Using the Find Tool....80

CONTENTS (continued)

Chapter 5 - Maintenance

5.1 Preventive Maintenance....89

Appendix A - Advant Structures

A.1 Advant Structures....A-91
  A.1.1 Admin Structure....A-92
  A.1.2 Aspect System Structure....A-93
  A.1.3 Control Structure....A-95
  A.1.4 Functional Structure....A-96
  A.1.5 Graphics Structure....A-97
  A.1.6 Library Structure....A-97
  A.1.7 Location Structure....A-98
  A.1.8 Node Administration Structure....A-99
  A.1.9 Object Type Structure....A-100
  A.1.10 Service Structure....A-101
  A.1.11 User Structure....A-102
  A.1.12 Workplace Structure....A-103

Appendix B - Default Settings for Aspect Categories

B.1 Introduction....B-105

INDEX

Chapter 1 Introduction

1.1 About this Book

This book describes version 1.0 of Advant Plant Explorer, which is the Advant Workplace Products main tool for building hierarchically structured models of a plant or project. Advant Plant Explorer is also a navigation tool that simplifies surveillance and structure building by making use of well known Windows NT Explorer user interfaces.

This book is intended for application engineers who configure a plant model through Advant Plant Explorer and for operators who view, interpret and respond to data in runtime.

The reader of this book should have a working knowledge of Windows NT Explorer interfaces, since Advant Plant Explorer is based on these user environments to a great extent.

This book is not intended to be the sole source of instruction for Advant Plant Explorer. It does not include functional descriptions in terms of in-depth technical explanations. It is recommended that people involved in system engineering attend the applicable system engineering courses offered by ABB.

Use of Warning, Caution, Information, and Tip

This publication includes **Warning**, **Caution**, and **Information** where appropriate to point out safety related or other important information. It also includes **Tip** to point out useful hints to the reader. The corresponding symbols should be interpreted as follows:

⚠ Warning indicates the presence of a hazard which could result in *personal injury*.

❗ Caution indicates the presence of a hazard which could result in *equipment or property damage*.

ℹ Information alerts the reader to pertinent facts and conditions.

Tip indicates advice on, for example, how to design your project or how to use a certain function.

Although **Warning** hazards are related to personal injury, and **Caution** hazards are associated with equipment or property damage, it should be understood that operation of damaged equipment could, under certain operational conditions, result in degraded process performance leading to personal injury or death. Therefore, comply fully with all **Warning** and **Caution** notices.

1.2 Product Overview

Advant Plant Explorer, one of the central functions in Advant Workplace Products, is your tool for building and configuring a model of your plant or project in intuitive integrated structures. The information about the plant is stored in a single storage which means that you just have to enter information once.

For a description of the Advant Workplace Products, refer to the *Advant Workplace Products for Operators Product Guide*.

1.2.1 General User Interface

The Advant Workplace Products runs on Windows NT 4.0. The user interface of the application has the well known look-and-feel of Windows NT Explorer.
Advant Workplace, in which Advant Plant Explorer can be displayed, uses the system of windows and panes used in Windows NT, and the Workplace is designed so as to retain this familiar environment. Advant Plant Explorer also shares some of the most common operations of Windows NT applications;

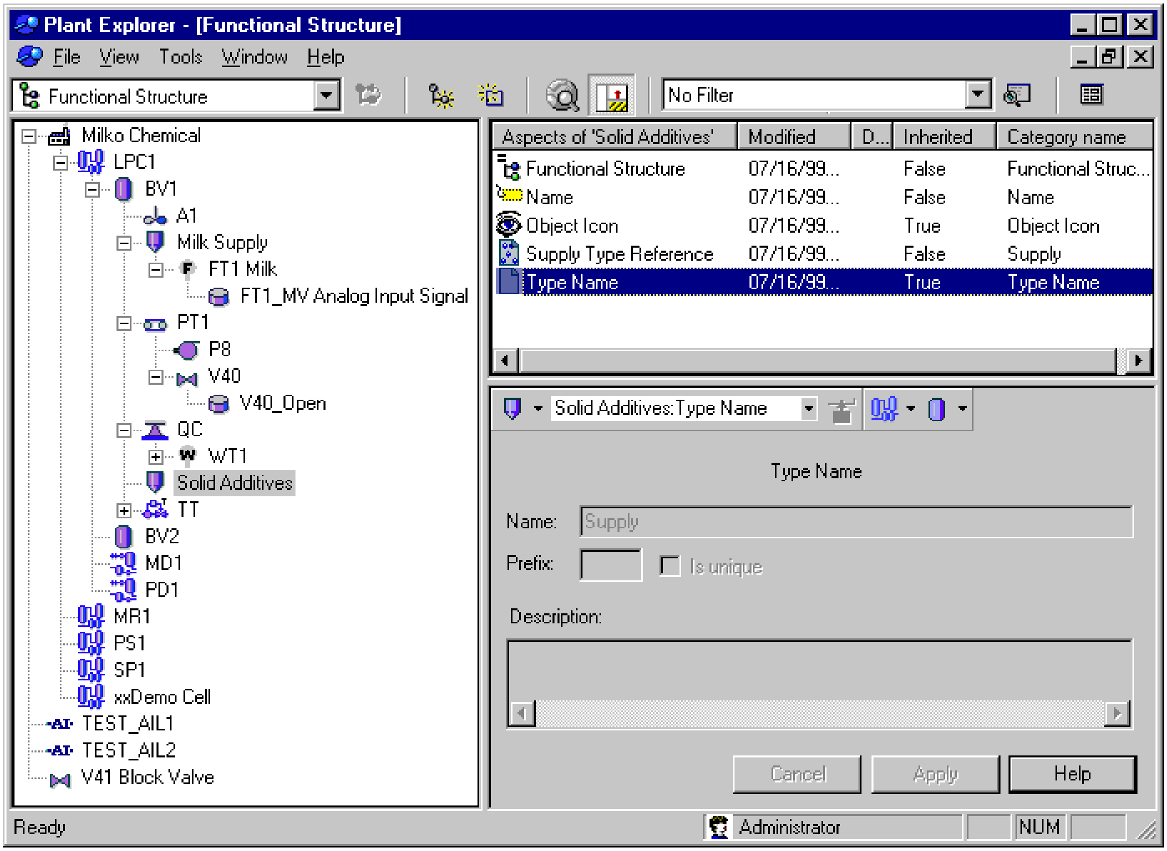
- you can cut, paste, copy,
- use short-cut keys
- and perform drag-and-drop operations within and between the Advant

Workplace panes.

The general user interface of Advant Plant Explorer is designed to resemble that of Windows NT Explorer.

ℹ There is one user interface feature of Advant Plant Explorer that is **not** consistent with the NT Explorer interface, and that is the presentation of child Objects. In NT Explorer, sub-folders in a folder structure are displayed in the right hand area of the window. In Advant Plant Explorer, however, child Objects are shown only in the Object tree structure; the right hand area showing only the aspect list.

Advant Plant Explorer also works in very much the same way as Windows NT Explorer in the way it handles ABB Objects placed in tree-like structures.



Aspects of 'Solid Additives'	Modified	D...	Inherited	Category name
Functional Structure	07/16/99...		False	Functional Struc...
Name	07/16/99...		False	Name
Object Icon	07/16/99...		True	Object Icon
Supply Type Reference	07/16/99...		False	Supply
Type Name	07/16/99...		True	Type Name

Type Name

Name: Supply

Prefix:

☐ Is unique

Description:

Figure 1-1. Advant Plant Explorer general user interface

In Advant Plant Explorer, you can use overlapping windows to get a better view of the various aspects of the structures. You can choose to view the aspects each in their own window, to see one aspect in the preview area, or to have one aspect displayed in a full-screen window.

1.2.1.1 Using Buttons and Menus

Operations that you carry out using Advant Plant Explorer can be accessed in different ways. You will recognize this from Windows NT Explorer. The operations found on the toolbar can also be performed by making use of context menus and drag-and-drop operations. You will find more information on how to make use of these operations in the following sections.

The appearance of the menus is optional. You can specify in the User Profiles (see Section 3.2, User Profiles for Advant Plant Explorer) whether you want the menus to be displayed.

1.2.1.2 Using the Mouse

The way you can use the mouse in Advant Plant Explorer is very much like the way you use it in Windows NT:

- Click the left mouse button to select Objects and aspects, to access the menus, to resize the window etc. This works exactly like in Windows NT.
- Click the right mouse button to access the context menus for ABB Objects and aspects.
- Click twice (not double click) on the name of an aspect if you want to change its name. Note that you can not change the name of an Object in this way. In order to be able to change the name of an ABB Object, you will have to edit its Name aspect. See Section 3.4.5, Editing an Aspect for more information on how to edit aspects.

1.2.1.3 Drag and Drop

You can carry out a number of tasks using drag-and-drop operations. They are used to cut, copy and move Objects and aspects, according to the following:

- *Move* is the default action carried out for a drag-and-drop operation. See Section 3.3.7, Moving an ABB Object.
- If you press CTRL while performing drag-and-drop, a *copy* operation is performed. See also Section 3.3.6, Cut/Copy/Paste.
- Pressing SHIFT+CTRL with drag-and-drop *inserts* an Object. See also Section

3.3.5, Inserting an ABB Object.

1.2.2 What You Can Do with Advant Plant Explorer

Advant Plant Explorer is a tool for creating the building blocks that you use to put together the parts of a plant or a project model. You can also use it to browse the structures of a plant or project, and to find particular objects contained in the structures by means of the **Find** tool.

Advant Plant Explorer integrates engineering, operation and information management and serves as a framework for application integration. The Advant Workplace Products supports third party integration, so that you are able to import files from other applications, such as Word and Excel.

The process of composing a structure is divided into a number of steps, as will be described in the following sections.

1.2.2.1 Creating Objects

In Advant Plant Explorer, you create Objects that are models of real world components of the structures that form a plant or project. An ABB Object is a virtual container for plant and process Object information. Objects can be any and all components that are parts of such structures, and each object can be placed several times within a structure. Objects can be computers on the network, users, buildings, electronic or mechanic components.

The same object may be placed in any number of structures. In this way, the same Object can be re-used any number of times, so that, for instance, you can add a user to a number of user groups, simply by adding the same User Object to several User Group Objects.

Objects can be simple, containing limited features and data, or they can be highly complex, containing a large number of components. Both types of Objects can be created with Advant Plant Explorer.

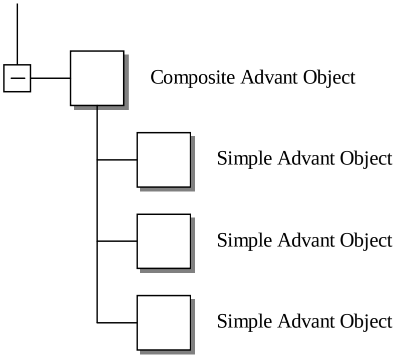


Figure 1-2. Simple and composite ABB Objects

You will find more information on how to work with Objects in Section 3.3, Objects.

To find more information on the different types of ABB Objects that can be created, refer to *Advant Workplace Engineering Methods*.

1.2.2.2 Creating Aspects

The characteristics of the Objects are described with a set of data. This data is called *aspects*, and it is the aspects of the Objects that are modified to change them. When modifying Objects you make use of aspect categories that are available in Advant Plant Explorer.

All characteristics of the ABB Objects are set up as aspects. This means that not only is the performance of an Object presented as aspects, but so is the location and name of it.

So by adding aspects to ABB Objects, you specify the position of an Object, geographically, functionality-wise and administratively. You can attach a CAD-drawing, information on part numbers, video clips of the Object in operation and so on; they are all aspects. The Objects are named and each Object can have a number of names, so that one and the same Object can be found on different search strings according to who is searching for it.

You will find instructions on how to work with Aspects in Section 3.4, Aspects.

1.2.2.3 Building Structures

To be able to represent the connections between Objects in the plant, they are composed into structures. There may be many structures to represent one and the same plant; there are a number of ways in which the Objects are interconnected.

Objects are assigned separate *structure aspects* for each position they hold within the structures, so that it is possible to see the roles they have in the plant from different points of view. You use Advant Plant Explorer to place the Objects in the structures. In this way you place them to represent the position they hold in, say, an administrative structure, a location structure, that shows the actual position of the Objects in the building housing the plant, and a functional structure that shows what actions are performed in the process by particular Objects. For more information about structures, see Section 3.5, Building Structures.

1.2.2.4 Searching for Objects

The structures you have built may be very complex, and it might take time to find an Object you are looking for by just browsing the structures. From Advant Plant Explorer, you can access a search feature to take care of this. The **Find** tool helps you search for Objects by entering a name or a path for which to search, and as a result the matching Objects will be shown in a list. To limit the scope of the search, you can select a certain structure, and when you carry out your search, it will be narrowed down to this structure. For more information, see Section 4.6, Using the Find Tool.

1.3 Related Documentation

Table 1-1 lists all documentation related to Advant Plant Explorer:

Category	Title	Description
System Administration	Advant Workplace Products Administrator's Guide	This book describes how you install the Advant Workplace Products software, including software options, and how you then perform maintenance.
Software	Advant Workplace User's Guide	This book describes everything about the user interface, for example how you present information, navigate and control objects.
Other	Advant Workplace Products for Operators Product Guide	This book is a presentation of the software and software options in Advant Workplace Products for Operators. It also includes hardware and software requirements and specifications.
	Advant Workplace Engineering Methods	This book is intended as a guide for plant engineering using Advant Workplace Products software together with Advant Controller 100 Series.
	AdvaSoft 2.0 for Windows NT User's Guide	This is the operators manual and contains information on how to use the AdvaSoft 2.0 for Windows NT.

1.4 Conventions

The following conventions are used throughout this book for the presentation of material:

- The words in proper names of screen elements (for example, the title in the title bar of a window, the label for a field of a dialog box) are initially capitalized.
- Capital letters are used for the name of a keyboard key if it is labeled on the keyboard. For example, press the ENTER key.

- Lowercase letters are used for the name of a keyboard key that is not labeled on the keyboard. For example, the **space bar**, **comma key**, and so on.
- A plus sign is used to indicate that you must simultaneously press several keys. For example, CTRL+C indicates that you must hold down the CTRL key while pressing the C key.
- The phrase "press and release" is used to indicate that you sequentially press several keys. For example, to close a window, press and release ALT, and then F4. This indicates that you press and release the ALT key, and then you press and release the F4 function key.
- The names of push and toggle buttons are boldfaced. For example, click **OK**.
- The names of menus and menu items are boldfaced. For example, the **File** menu.
  - The following convention is used for menu operations: MenuName > MenuItem > CascadedMenuItem. For example: choose **File** > **New** > **Type**.
  - The **Start** menu name always refers to the **Start** menu on the Windows NT Task Bar.
- System prompts/messages in the MS-DOS prompt are shown in the Courier font, and user responses/input are in the boldfaced Courier font. For example, if you enter a value out of range, the following message is displayed:

  ```
  Entered value is not valid. The value must be 0-30.
  ```

  In a tutorial, you may be told to enter the string TIC132 in a field. The string is shown as follows in the procedure:

  ```
  TIC132
  ```

1.5 Terminology

The following is a list of terms associated with Advant Plant Explorer that you should be familiar with.

Term	**Description**
ABB Object	A model of a real world object, used to build the structures that represent a plant or project.
simple Object	An Object that does not contain any other Objects.
child Object	Another name for a simple ABB Object.
composite Object	An ABB Object that contains two or more other Objects.
parent Object	Another name for a composite ABB Object.
aspect	Characteristics specifying an ABB Object.
aspect category	All aspects belongs to one aspect category. The aspect category defines an icon, a default name, the aspect type etc. for the aspect. The aspect category is also used to hold parts of the authority definition for aspects.
name	One of the names that an ABB Object can have. The same Object may have several different names, depending on which structure it is located in and who is viewing the Object tree.
name path	Used when searching for a particular ABB Object. A name path works in the same way as you state a path for locating a file in Windows NT.
override name	A name that you give to an aspect if you do not want to use the name that is predefined for an aspect category.
context menu	A menu that appear when you right-click a particular area in the Advant Plant Explorer window and whose content varies according to where you click.
temporary root	An Object contained in a structure that you want to consider the topmost Object when working with a sub-structure.

Chapter 2 Installation

2.1 Installation Procedures

Advant Plant Explorer is a part of the Advant Workplace Products software package. The whole package is installed according to the instructions in the *Advant Workplace Products Administrator's Guide*.

2.2 Product Verification

To get information regarding the installed software, choose **Help >About Advant Plant Explorer** from the menu bar. This displays an information box with information regarding version, licensing, and so on.

To close the box, click on the **OK** button.

Chapter 3 Configuration

3.1 Getting Started

The following are the major steps in the workflow for Advant Plant Explorer:

1. Making special settings that need to be performed before using Advant Plant Explorer. These settings decide what information will be displayed for the user.
    a. User Profiles. Profiles are used to make it easier for each user to reach the information he or she needs. You can set up profiles for each user, that decide the type of information that will be displayed. See Section 3.2, User Profiles for Advant Plant Explorer.

    b. Filter Configuration. The filters are used to narrow down the amount of information displayed to different users, so that each user will have fast access to relevant information. See Section 3.2.1, Configuring Aspect Filters.
2. Creating ABB Objects. When you start building the structure model of your project, you will first need to create the building blocks for the model. These are the ABB Objects. See Section 3.3, Objects.
3. Creating aspects. When you have created an ABB Object, you need to define it by adding a set of data, before using it in the project model. See Section 3.4, Aspects.
4. Building structures. The structures are representations of the relations that exist between the ABB Objects, from a number of different perspectives. In order to visualize these relations you create a number of structures in which your ABB Objects can be placed. See Section 3.5, Building Structures.

3.1.1 Configuration User Interface

Advant Plant Explorer can be used both as a stand-alone unit and inside Advant Workplace. For more information concerning the Advant Workplace, see the *Advant Workplace - User's Guide*.

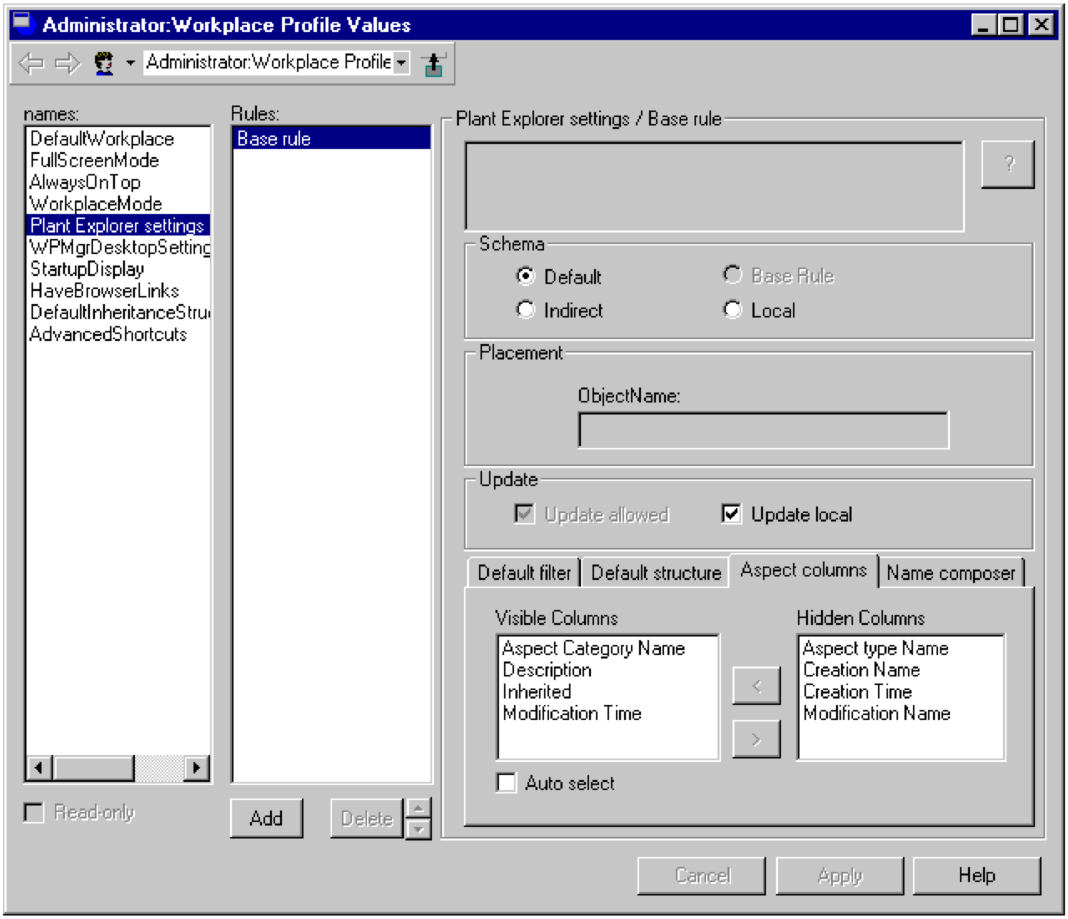
3.1.2 Application Start-up

When using Advant Plant Explorer inside Advant Workplace, you start it by selecting Plant Explorer... from the Tools menu. You can also start it by clicking the Advant Plant Explorer icon displayed in Advant Workplace application Bar.

When you use it as a stand-alone unit, the application can be started by selecting **Start > Program > Advant > Plant Explorer.**

3.2 User Profiles for Advant Plant Explorer

In order to make it easier for each user to reach the information he or she needs, you can set up profiles for each user, that decide the type of information that will be displayed. You can set a default aspect filter, a default structure, make settings for the name composer and the aspect list. This means that all users can quickly access the information that they need.



☐ Read-only

Schema

● Default ○ Base Rule
○ Indirect ○ Local

Placement

ObjectName:

Update

☑ Update allowed ☑ Update local

Visible Columns	Hidden Columns
Aspect Category Name	Aspect type Name
Description	Creation Name
Inherited	Creation Time
Modification Time	Modification Name

☐ Auto select

Figure 3-1. Profile Values dialog

The User Profile values are set on the **Workplace Profile Values** aspect for each user in the **User structure**. Select **Plant Explorer settings** in the names list. The settings are made on the four tabs in the dialog.

- **Default Filter**:
  On the drop-down list you can select a filter that you want to be the default filter for the user.
- **Default Structure**:
  Use the drop-down list on this tab to set a default structure to be displayed in the Object tree view area on start-up.
- **Aspect Columns**:
  The list on this tab shows all aspect columns that can be displayed on the aspect list. Use the lists to set the columns to be included in the user's aspect list.
- **Name Composer**:
  On this tab, you can set the way in which the names of Objects will be presented in the object structures. You can enter any "free text" string, that will be displayed with the Objects in the view. You can also set how the names of Objects are presented, for example **%Name%**, **%Type Name%** to see both the name of the Object and the name of the Object type displayed beside the Object in the Object structure.

3.2.1 Configuring Aspect Filters

An aspect filter is yet another aspect of an ABB Object. The aspect filter is configured in the Edit view. The Edit view shows all available aspect categories, and you can select which categories to include in the aspect filter. The filters available in an Advant Plant Explorer window can be selected from a filter drop-down menu. An aspect filter is valid for the Workplace. The Aspect Filters also affect the context menu.

To configure an aspect filter, follow these steps:

1. Click the **Filter Configuration** button. This brings up the dialog for configuring aspect category filters.

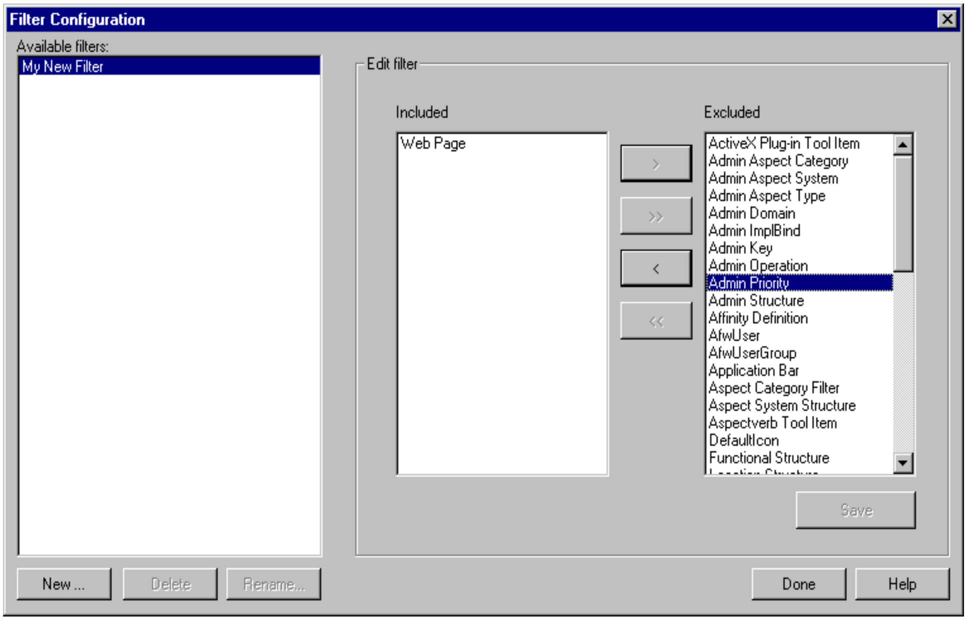


Figure 3-2. Filter Configuration dialog box

2. In the dialog to the right, you can see a list of all existing filters. To the left you can see the aspect categories that can be included in a new filter. See Appendix A for more details on aspect filters.
3. To configure an existing filter, select it in the Available filters list. When selected, the categories included in that filter are displayed in the **Edit filter** area. You can add and delete aspect categories by selecting them in the list and click the arrow buttons to move them between the **Included** and **Excluded** lists.
4. To create a new aspect filter, click the **New** button. This will display the **New Filter** dialog box.

5. In the text box, enter a name for the new filter.

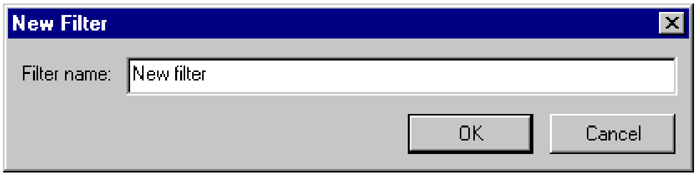


Figure 3-3. New Filter name dialog

6. Click **OK**. The name of the new filter is displayed in the Available Filters list, and you can begin configuring it by adding aspect categories to be included in the filter.
7. To include an aspect category in the filter, select it from the **Excluded** list, and add it to the filter by clicking the arrow button, so that it appears in the **Included** list.
8. When you have finished adding aspect categories to your filter, click **Apply**.
9. If you are finished configuring the filters, click **Done** to return to the Object tree view window.
10. Activate the filter via the Filter Selector.
11. Verify the filter configuration by browsing in different structures and check that only the configured aspect categories are listed in the aspect list area.

    Aspects included in the aspect filter are those that will be displayed in the aspect list.

3.3 Objects

Objects are the basic building blocks that you use for composing the model of your plant. The following sections will guide you through the operations involved in creating and modifying ABB Objects.

The following section gives a description of the concept of Objects and how to use them in order to configure your Advant system.

3.3.1 What Is an ABB Object?

ABB Objects are a key concept in Advant Plant Explorer. With Advant Plant Explorer you can create the most basic elements of your project, the *simple* ABB Objects. Simple Objects can be placed directly in a structure, but they can also be contained within other Objects, the *composite* Objects. Simple Objects can be pipes or valves or other such elements that you use to build a more complex unit. Another example of a simple Object can be an Advant User, who is a part of a User Group. The User group is then a composite Object.

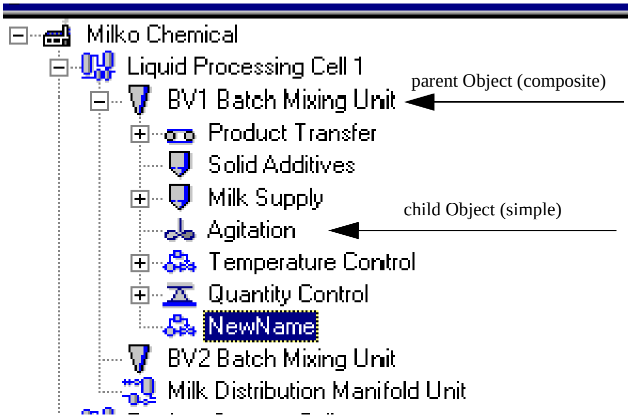


Figure 3-4. Simple Objects contained in composite Objects

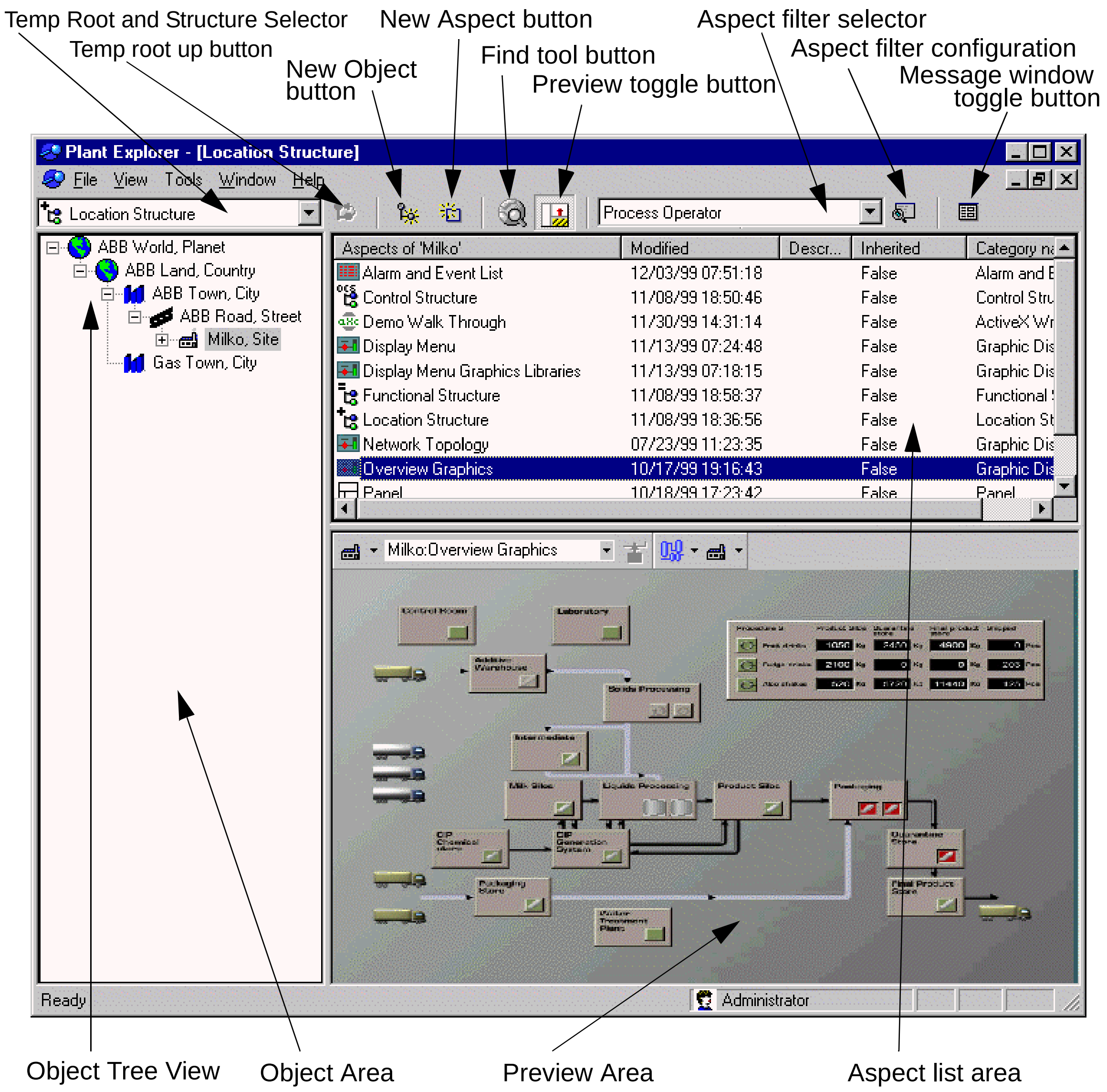
Composite Objects, that can contain several other ABB Objects, are called *parent* Objects. They are composed of a number of subordinate Objects; *children*. When you create a new ABB Object, you can select a parent Object, to which your new Object will be a child.

3.3.2 Object Tree View Window

The Object tree view window is what you use when working with ABB Objects, aspects and structures. You use it to carry out the following operations:

- Creating a new Object. See Section 3.3.4, Creating an ABB Object
- Inserting an ABB Object. See Section 3.3.5, Inserting an ABB Object

- Copying an ABB Object. See Section 3.3.6, Cut/Copy/Paste
- Moving an ABB Object. See Section 3.3.7, Moving an ABB Object.
- Deleting an ABB Object. See Section 3.3.8, Deleting ABB Objects
- Creating a new aspect. See section Section 3.4.3, Creating an Aspect
- Copying an aspect. See Section 3.4.4, Copying an Aspect
- Editing an aspect. See Section 3.4.5, Editing an Aspect
- Configuring aspect category filters. See Section 3.2.1, Configuring Aspect Filters



Aspects of 'Milko'	Modified	Descr...	Inherited	Category na
Alarm and Event List	12/03/99 07:51:18		False	Alarm and E
Control Structure	11/08/99 18:50:46		False	Control Stru
Demo Walk Through	11/30/99 14:31:14		False	ActiveX Wr
Display Menu	11/13/99 07:24:48		False	Graphic Dis
Display Menu Graphics Libraries	11/13/99 07:18:15		False	Graphic Dis
Functional Structure	11/08/99 18:58:37		False	Functional
Location Structure	11/08/99 18:36:56		False	Location St
Network Topology	07/23/99 11:23:35		False	Graphic Dis
Overview Graphics	10/17/99 19:16:43		False	Graphic Dis
Panel	10/18/99 17:23:42		False	Panel

Figure 3-5. Stand-alone Advant Plant Explorer window

The Object tree view window has the following fields, buttons and menus for configuring Advant Plant Explorer:

The menus are optional. You can change the Set/Hide settings in the User Profiles dialog.

3.3.2.1 File Menu

This menu is available only when Advant Plant Explorer is run in stand-alone mode. It contains the following items:

New: Creates a new browser window.

Exit: Exits Advant Plant Explorer

3.3.2.2 View Menu

This menu is used to select the following options:

Toolbar: Shows / hides the toolbar.

Show / hide Preview: **Show** mode presents an aspect view in the preview area. In Hide mode, a view for a selected aspect is not automatically displayed.

Refresh: Refreshes the window of Plant Explorer. Refresh can also be performed by pressing F5.

3.3.2.3 Tools Menu

The Tools menu entry contains the same operations as the toolbar buttons:

New Aspect: Brings up the New aspect dialog box.

New Object: Brings up the New Object dialog box.

Find: Brings up the Find dialog box.

Aspect Filter: Brings up the Filter Configuration dialog box.

Up One Level: Sets the Temporary Root one level higher in the hierarchy.

Show/Hide messages: Controls the display of the message window.

3.3.2.4 Window Menu

The Window menu only works in stand-alone mode. It provides the standard menu items for Windows NT applications.

3.3.2.5 Help Menu

Advant on-line Help: gives you access to the on-line help for Advant Plant Explorer.

Advant on-line Help Contents: gives you access to a table of contents showing the complete structure of the on-line Help.

Advant on-line Documentation: gives you access to the on-line documentation for the Advant system.

About Advant Plant Explorer: displays a standard About dialog box.

3.3.2.6 Temporary Root and Structure Selector

The Temp Root and Structure selector is a drop-down list from which you can select the structure to browse, and for selecting a temporary root.

3.3.2.7 Temporary Root up Button

The Temp Root Up button is used to move up one level in the structure you are browsing.

3.3.2.8 New Object Button

This button is used for creating a new ABB Object. Clicking it will bring up the New Object dialog box, in which you enter a name for the new Object and add it to the structure.

3.3.2.9 Preview Toggle Button

This button is used to display the preview area on the main window, which shows the view/s for a selected aspect. If the preview option is switched off, a view of an aspect that you want to see can be displayed in an overlapping window when you double-click the aspect.

3.3.2.10 Aspect Filter List

The drop-down list displays filters that you can select to be the default filter for the user. The list shows the available category filters that are configured for the aspect list.

3.3.2.11 Aspect Filter Configuration Button

Clicking this button enables editing/configuration of aspect filters.

3.3.2.12 Aspect List

This list shows the aspects for a selected Object. To edit an aspect, you can right-click it to gain access to the context menu for the aspect.

3.3.2.13 Preview Area

If the Preview option is switched on, this area will show a view for the selected aspect, provided that the aspect has a view. Some aspects have several views, and you can select which one to display from a View Selector drop-down list in the Preview area.

3.3.2.14 New Aspect Button

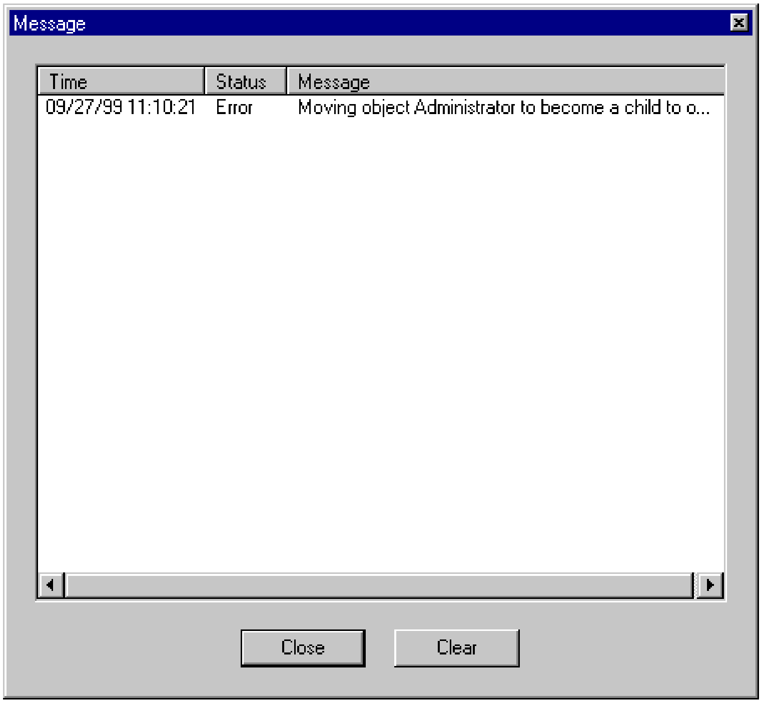
Clicking this button brings up the New Aspect dialog box.

3.3.2.15 Find Tool Button

When you click this button, the Find dialog box will be displayed, enabling you to search for Objects by entering a name or a path name.

3.3.2.16 Message Window Button

If you click this button, the Message Window is displayed, in which you can see messages from the system.



Time	Status	Message
09/27/99 11:10:21	Error	Moving object Administrator to become a child to o...

Figure 3-6. Message window

3.3.3 Object Tree Context Menu

The Object Context menu is reached by right clicking an Object in Advant Plant Explorer.The Context Menu contains Plant Explorer specific items that can only be seen in this application together with items that are visible also in Advant Workplace. The Plant Explorer specific items are the first section of the Context

Menu, starting with **New Object**. Refer to *Advant Workplace -User's Guide* for further information.

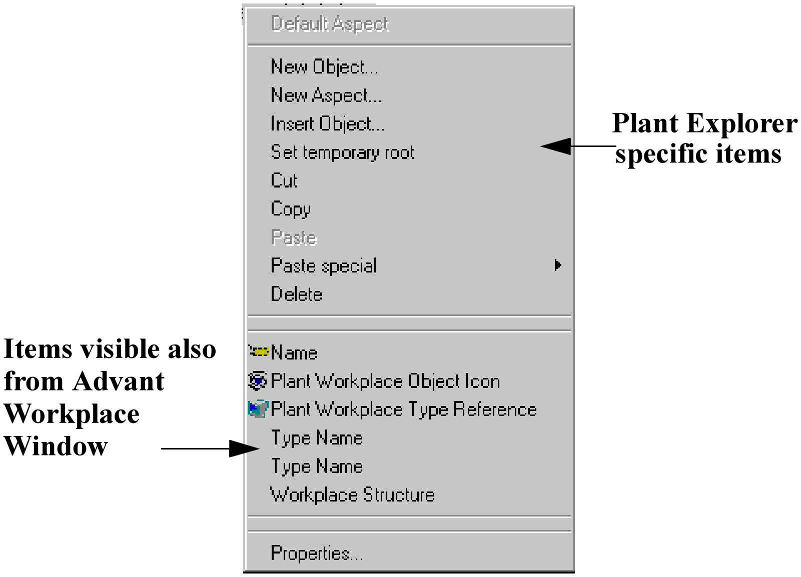


Figure 3-7. Object Context Menu

The context menu that is available for operations involving the Object Tree contains the following menu items:

New Object

Brings up the New Object Dialog.

New Aspect

Brings up the New Aspect dialog.

Insert Object...

Brings up the Insert Object dialog. The Object selected in the Insert Object dialog will become a child to the structure node pointed at.

If the selected Object type can not be inserted under the node pointed at, this menu entry will be grayed out. You have to point at a structure node to be able to insert an Object.

Set Temporary Root

This operation makes the selected node the root node.

Cut

This operation removes the selected Object and all its children in the current structure, and places them on the clipboard. No structure aspects are copied in the Cut operation. Only the internal structure of the Objects s saved. If an Object, which is part of a Cut operation, is no longer part of any structure, the Object and all its aspects are deleted.

Copy

Copies the selected Object and all its children in the current structure to the clipboard. No structure aspects are copied in the Copy operation. Only the internal structure of the Object is saved.

Paste

Pastes a tree structure to the selected Object. The pasted Objects is linked into the current structure by adding a new structure aspect.

Paste Special:

Paste Object: Pastes only the selected Object, and not its children.

Paste aspect: Pastes the aspect/s on the clipboard to the selected Object.

Delete

Deletes the selected Object and all its children in the current structure. If an Object, that is part of a Delete operation, is no longer part of any structure, the Object and all its aspects are deleted. To be able to delete an Object you must have the user privilege required to delete the specific Object and its aspects. When an Object is deleted, the Object above in the structure gets selected. This works the same way as in Windows NT Explorer.

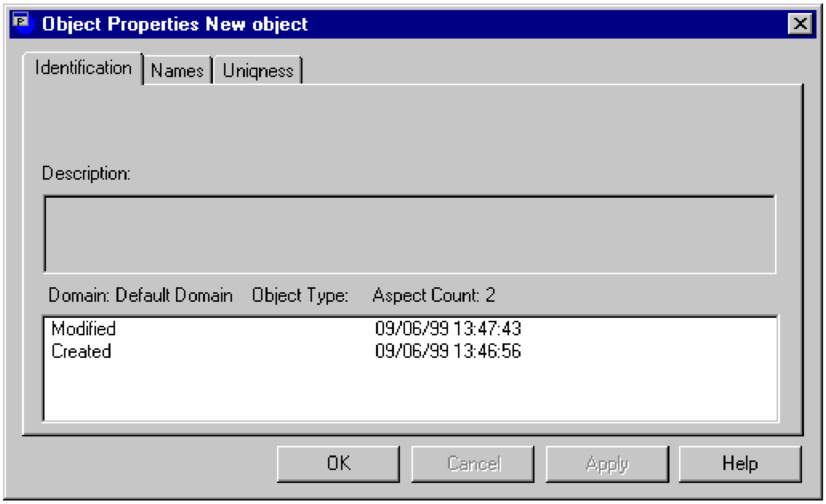
User privileges affect the contents of the context menu.

3.3.3.1 Object Property

The Object Properties dialog is reached from the Object Context Menu. Right click the object and choose Properties from the Context menu. Through the Properties dialog you can change data for the Aspect, e.g. change the object name if it is not unique.

Identification Tab

The Identification tab only displays information about when the object was created and last modified. If an object description exists it will also be visible in the Description Text box.



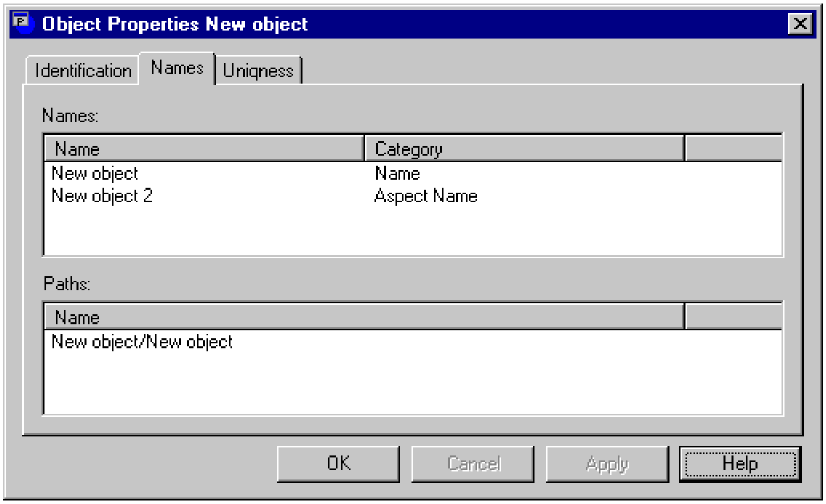
Domain: Default Domain Object Type: Aspect Count: 2

Modified	09/06/99 13:47:43
Created	09/06/99 13:46:56

Figure 3-8. Identification tab

Names Tab

The Names tab displays all names one object has. You can also see the Path to the object.



Names:

Name	Category
New object	Name
New object 2	Aspect Name

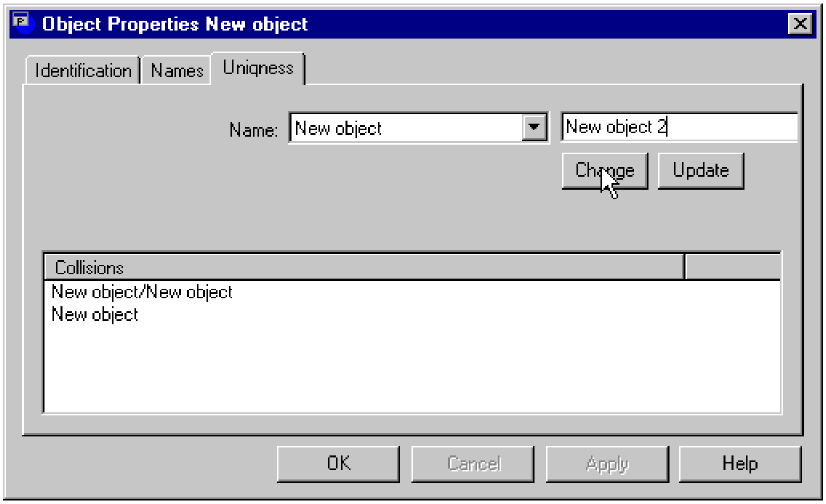
Paths:

Name
New object/New object

Figure 3-9. Names tab

Uniqness Tab

The Advant system supports objects with similar names. On the Uniqness tab a check is performed to control that the object name is unique. All collisions are displayed in the Collisions text box. To check for collisions, select an object in the Name drop down list. If there is a collision, the name of the object will be displayed in the text box next to the drop down list. Enter a new name and press the Change button.



Name: New object

New object 2

New object/New object
New object

Figure 3-10. Uniqness tab

3.3.4 Creating an ABB Object

An ABB Object can be created in a number of ways. In this respect, Advant Plant Explorer works very much like Windows NT Explorer, where you can create new files and folders by clicking a **New** button, by performing drag-and-drop operations or by selecting an operation from a menu. This makes it possible for you to work with Advant Plant Explorer the way that you feel most comfortable with.

3.3.4.1 Object Types

When you create a new Object, you can choose between a range of Object types. The available Object types are dependent on the structure in which the new Object is to be created. They also depend on the Object that is the parent of the child Object you are creating, and on user authority. Thus, the Objects that are available for you for creation depend on your user rights; you need to have at least engineer privileges to be able to create Objects, and creation of Advant Users is limited to administrator's rights. To create a new Object type, see Section 3.3.9, How to Create a New Object Type.

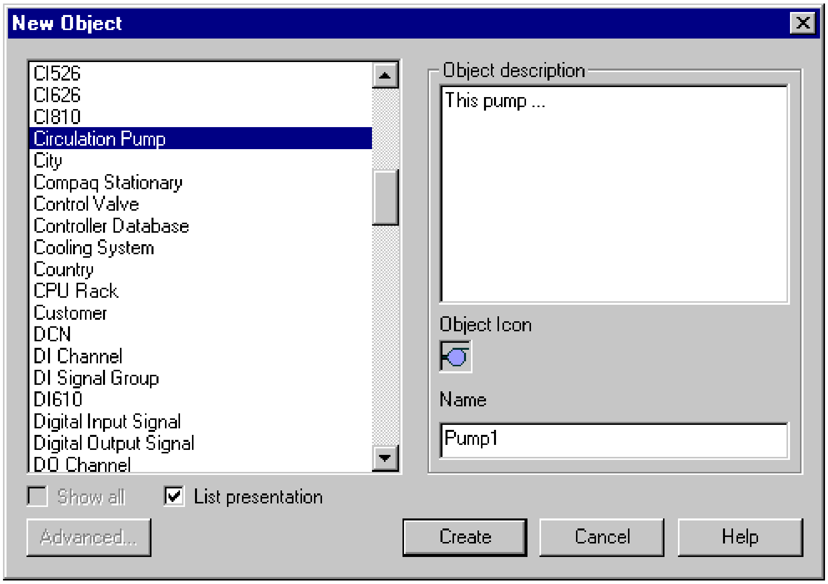
Object types are organized into an Object type structure. The Object type defines a number of things, such as:

- Aspects that are automatically created.
- Aspects that are suggested as candidates for an Object.
- Aspects that are valid for an Object.
- Aspects that are shared by inheritance.

To each Object type is attached an Object Type Name and a Structure aspect. For more information on Object types, see the *Advant Workplace Engineering Methods*.

To create a new ABB Object using the toolbar buttons, follow these steps:

1. Click an ABB Object, to which you want to add a new child Object, or click a node under which you want to place an Object.
2. Click the **New Object** button. The New Object dialog is displayed.



CI526
CI626
CI810
Circulation Pump
City
Compaq Stationary
Control Valve
Controller Database
Cooling System
Country
CPU Rack
Customer
DCN
DI Channel
DI Signal Group
DI610
Digital Input Signal
Digital Output Signal
DO Channel

Object description: This pump ...

Object Icon

Name: Pump1

☐ Show all ☑ List presentation

Figure 3-11. New Object dialog without hierarchical ordering

In this dialog you can select the Object type for the new Object, as well as give a description of the Object and name it.

The list of Objects displayed in this dialog is not filtered, showing all *valid* Objects. Objects can be filtered to show the type of Object that is the parent Object for your new Object, the structure in which it is placed, and your authority. The list then displays all *suggested* Objects for creation. If you want to see all *valid* Objects, select **Show All**.

In the New Object dialog, the available Objects are displayed in a structure like the Object type structure presented in the Object tree area. If you would rather see the Objects listed without any hierarchical ordering, select **List Presentation**. This will display the available Objects in a list. See Figure 3-11.

3. Click **Create**. The new ABB Object is created as a child Object to the Object you selected. The parent-child relationship is represented by the +/- signs, showing that an Object has a child attached to it. If you click a structure node and create a new Object, the Object will become a child to the node pointed at.
4. By clicking the **Advanced** button, you are able to further specify where to place the new Object. The Object position dialog box is displayed.

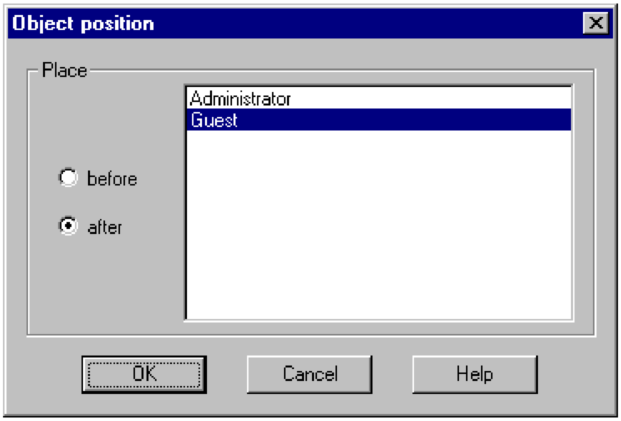


Figure 3-12. Object position dialog

5. In this dialog, you can select a position where to place your newly created Object.
   The list in this dialog presents the Objects to which your new Object can be connected.
   If you select **before**, your Object will be placed before the Object you are pointing at, on the same hierarchical level.

If you select **after**, the Object will be placed after the Object you are pointing at, on the same level.

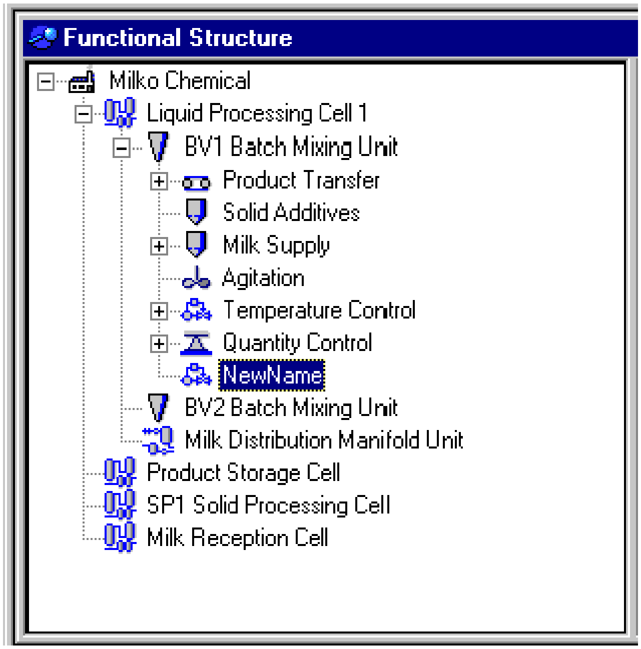


Figure 3-13. A new Object placed in the structure

An ABB Object can also be created using the context menu, which is accessed by right-clicking anywhere in the Object tree view area. If you want to create a new child to another Object, right-click this Object. If you want to add the new Object to a node you have selected, right-click the node. Then follow the steps below:

1. Right-click the Object to access the context menu.
2. Select **New Object** from the menu. A list of available Object types is displayed in the dialog.
3. Select the Object type you wish to create, or if you want to create an Object which is not suggested, but valid, for the Object pointed at, select **Show all**.
4. Enter a name and, if desired, a description of the Object.

5. Click **Create**, or simply press the ENTER keyboard button.The new Object will be placed on a node that you have pointed at, or as a child to an Object you have selected.

When the ABB Object has been created, the right-hand pane will show the default aspects given to the Object. You can add more aspects to further define the Object. This will be described in Section 3.4, Aspects.

The Objects contained in the structures can be ordered alphabetically. You can specify this in the User Profiles, see Section 3.2, User Profiles for Advant Plant Explorer.

3.3.5 Inserting an ABB Object

You can place the same object in different structures which makes it easier to navigate in the system. Inserting an Object actually means adding a new structure aspect to it.

The **Insert Object...** operation is related to the **Create Shortcut** operation in Windows NT. The **Insert Object...** operation can be performed by using the context menu for the Object tree, or using drag and drop.

To perform an **Insert Object...** operation on an Object, follow these steps:

1. Select the Node where you want to insert an Object, and right-click it to bring up the context menu.
2. Select **Insert Object...** from the menu.
3. In the dialog that appears, browse your way to the Object you want to insert and select it. See Figure 3-14.

4. Click **Insert**.

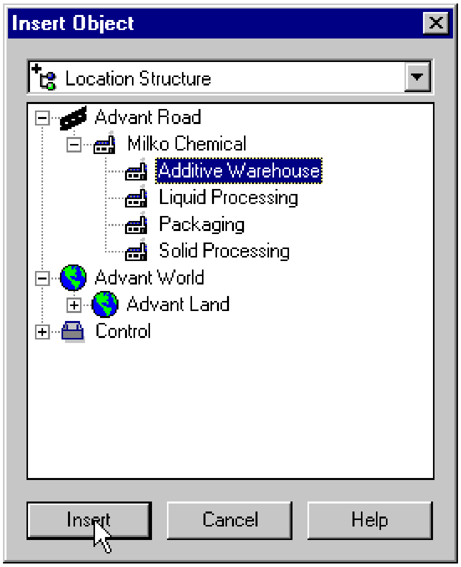


Figure 3-14. Select structure where to insert object

The Object inserted must be valid for the structure in which it is to be inserted for the Insert Object operation to be performed.
The Insert Object option is dimmed on the context menu if you try to do this without pointing at a structure node.

To **Insert** an Object, you can also do the following:

1. Click the Object that you want to insert.
2. Drag it to its new position, while pressing <SHIFT-CTRL>, and drop it.

To be able to perform an **Insert Object** operation within one and the same structure, <SHIFT-CTRL> must be pressed when performing the drag-and-drop operation. If it is not, a drag and drop operation within the same structure means that the Object is *moved*, see Section 3.3.7, Moving an ABB Object.

3.3.6 Cut/Copy/Paste

A **Copy** operation copies the Object and all its children and their aspects to the clipboard. In the same way, a **Cut** operation cuts both the Object and its children and all their aspects and places them on the clipboard. If any of the cut Objects is no longer part of any structure, these Objects and all their aspects are deleted.

To perform a **Copy** operation, follow these steps:

1. Select (click) the Object you want to copy.
2. Select **Copy** from the Object tree view context menu.
3. Click a node to where you want to copy your Object.
4. Select **Paste** on the context menu.

All Cut/Copy/Paste operations can be carried out using the standard Windows procedure: CTRL+X performs a Cut operation, CTRL+C means Copy and CTRL+V pastes the contents of the clipboard.

Structure operations such as Cut/Copy/Paste of Objects never include structure aspects. Only the internal structure of the Cut/Copied sub-tree is saved. This structure is reproduced when pasting the sub-tree. If the Paste operation is made in another structure, the sub-tree is adapted to the new structure.

A copy operation can also be carried out through a drag and drop operation while holding CTRL and pressing the left mouse button.

3.3.7 Moving an ABB Object

You can move an ABB Object by performing a drag and drop operation.

1. Select the Object by clicking it.
2. You can move the Object by dragging it to another place in the structure.
3. When you drop the Object on top of another Object in a structure, the moved Object becomes a child to this Object.

3.3.8 Deleting ABB Objects

Delete removes the Object's position in the current structure. It also removes all the children of the deleted Object. If any of the deleted Objects is no longer part of any structure, the Object and all its aspects are deleted. To be able to delete an Object, you must have the privilege specified for this particular Object. To remove an Object and all its children, do the following:

1. Select the Object to be deleted. Right-click it to access the context menu.
2. Select **Delete** from the menu. If the Object and its children has more than one structure aspect, that is, if it occurs in more than one structure position, then the Object is removed from the structure in which you are working.
   If the Object has only one structure aspect, the Object and all its aspects are deleted entirely.

or

1. Select the Object to be deleted.
2. Press the **Delete** keyboard button.
3. On the confirmation dialog that is displayed, click **OK** to delete the Object.

3.3.9 How to Create a New Object Type

Only a user who has the application engineer privilege can create or modify an object type. All object type definitions are located in the object type structure. You can create new Object Types, that can be used when creating ABB Objects. To create a new Object Type, follow these steps:

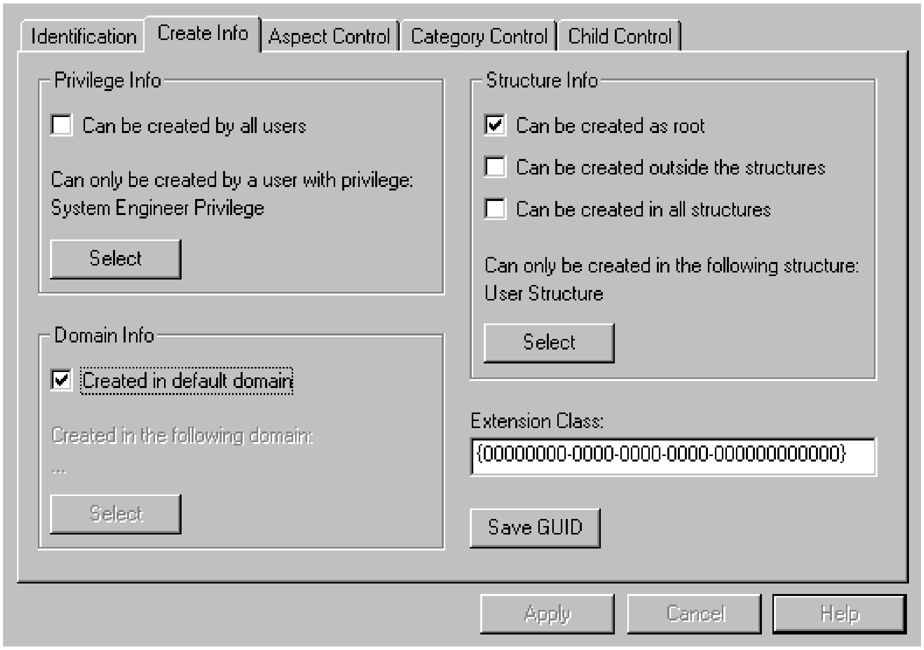
1. Select the Object Type Structure.
2. Select **New Object** on the Object tree view context menu for an object type group object.
3. Select **Object Type**, which is the only Object available for this operation.
4. Enter a name for the new Object Type.
5. Click **Create**.
6. Configure the Object according to your needs.

For additional information on Object types, refer to the *Advant Workplace Engineering Methods Reference Manual*.

When an object type definition object is created a definition aspect for the new object type is also created. This aspect determines the behavior of the object type. The aspect view for the definition aspect contains a tab control which has four interesting pages. They are described below.

3.3.9.1 Create Info Page

On the create info page information about the creation of the object type is determined. The page can be seen in Figure 3-15.



Privilege Info

☐ Can be created by all users

Can only be created by a user with privilege:
System Engineer Privilege

Domain Info

☑ Created in default domain

Created in the following domain:
...

Structure Info

☑ Can be created as root

☐ Can be created outside the structures

☐ Can be created in all structures

Can only be created in the following structure:
User Structure

Extension Class: {00000000-0000-0000-0000-000000000000}

Figure 3-15. The create info page

The different sections of the page are described below.

Privilege Info

Specifies if instances of the object type can be created by all users or only by a user with a specific privilege.

Domain Info

Specifies if instances of the object type will be created in the default domain or in a specific domain.

Structure Info

Specifies if instances of the object type can be created in all structures or only in a specific structure. Specifies if instances of the object type can be created as root objects. Also specifies if instances of the object type can be created without being inserted into a structure (only shown if the user holds the software developer privilege).

Extension Class

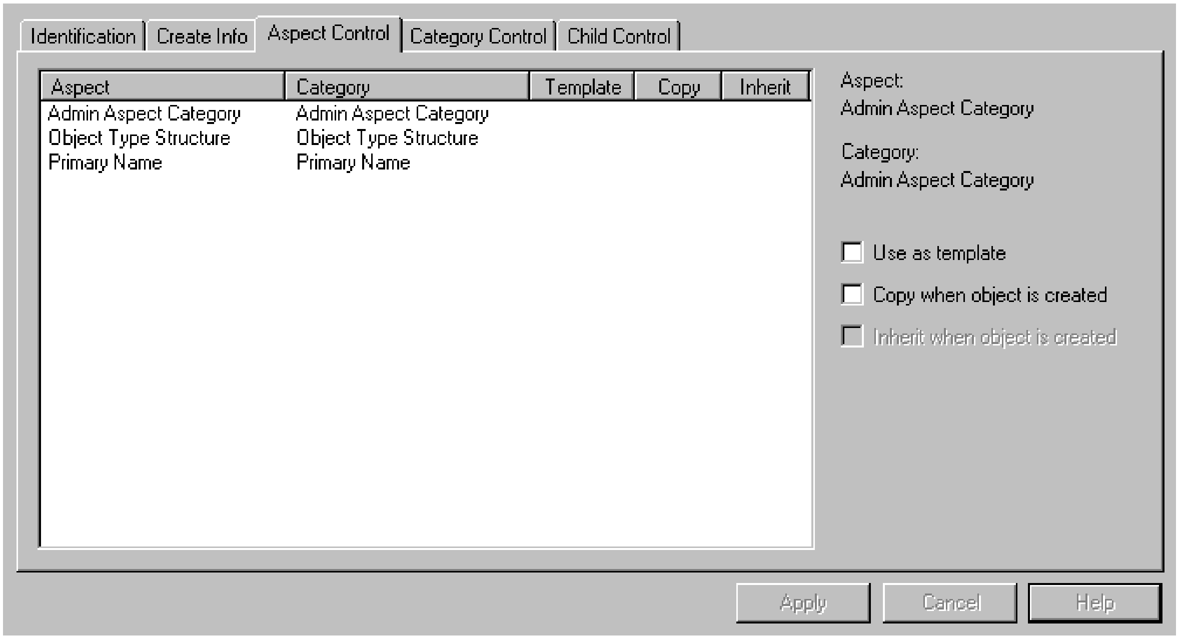
The extension class is used to extend the operation of an object type both when an instance is to be created by allowing it to supply an Active X used in the create object dialog, and secondly it is told to update the object created from an object type. The extension object is also passed as the create argument to all aspects that are created through the object type. This section is only shown if the user holds the software developer privilege.

Save GUID

When a software developer creates a standard object type, the developer can save the GUID for it. This makes it possible to refer to the object type with a constant. The GUID is saved in a *.h file in the AdvantSDK directory. This button is only shown if the user holds the software developer privilege.

3.3.9.2 Aspect Control Page

On the aspect control page settings for the aspects on the object type definition object are determined. The page can be seen in Figure 3-16.



Aspect	Category	Template	Copy	Inherit
Admin Aspect Category	Admin Aspect Category			
Object Type Structure	Object Type Structure			
Primary Name	Primary Name			

Aspect:
Admin Aspect Category

Category:
Admin Aspect Category

☐ Use as template
☐ Copy when object is created
☐ Inherit when object is created

Figure 3-16. The aspect control page.

The list in the page contains the aspects on the object type definition object. The different settings that can be done for the aspects are described below.

Use as template

When an aspect on the object type definition object is set to be used as a template, the (template) aspect is copied instead of a new aspect being created from scratch when a user creates an aspect on an instance of the object type with the same aspect category as the template aspect. As an alternative an aspect can be set to be used as a template in the properties dialog for the aspect, simply by adding the template aspect key to the aspect.

Copy when object is created

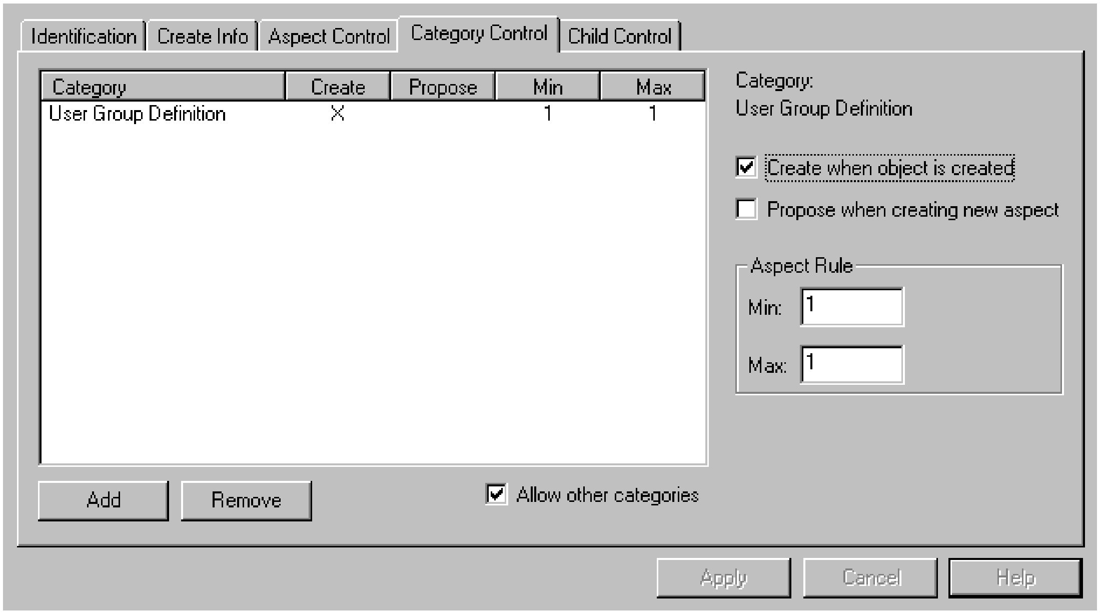
When an aspect on the object type definition object is set to be copied when object is created, then when an instance of the object type is created the aspect are copied to the object type instance. As an alternative an aspect can be set to be copied when object is created in the properties dialog for the aspect, simply by adding the auto-instantiate aspect key to the aspect.

Inherit when object is created

When an aspect on the object type definition object is set to be inherited when object is created, then when an instance of the object type is created the aspect is inherited to the object type instance. If an aspect is set to be inherited after instances of the object type have been created, the aspect is inherited to the instances as well. Only aspects of an aspect category that supports inheritance can be inherited. As an alternative an aspect can be set to be inherited when object is created in the properties dialog for the aspect, simply by setting the inheritance mode to inherited.

3.3.9.3 Category Control Page

On the category control page settings for aspect categories are determined. The page can be seen in Figure 3-17.



Category	Create	Propose	Min	Max
User Group Definition	X		1	1

Category:
User Group Definition

☑ Create when object is created

☐ Propose when creating new aspect

Aspect Rule
Min: 1
Max: 1

☑ Allow other categories

Figure 3-17. The category control page.

The list in the page contains aspect categories that have some settings. To add a category to the list press the add button. To remove a category press the remove button. The different settings that can be made for aspect categories are described below.

Create when object is created

When an aspect category is set to be created when object is created, then when an instance of the object type is created an aspect with that aspect category is created on the object type instance.

Propose when creating new aspect

When an aspect category is set to be proposed when creating new aspect, then in the create aspect dialog for an instance of the object type only those aspect categories which is set to be proposed are primarily shown in the dialog. If a user wants to see all aspect categories in the dialog he or she must check the show all checkbox.

Aspect rule

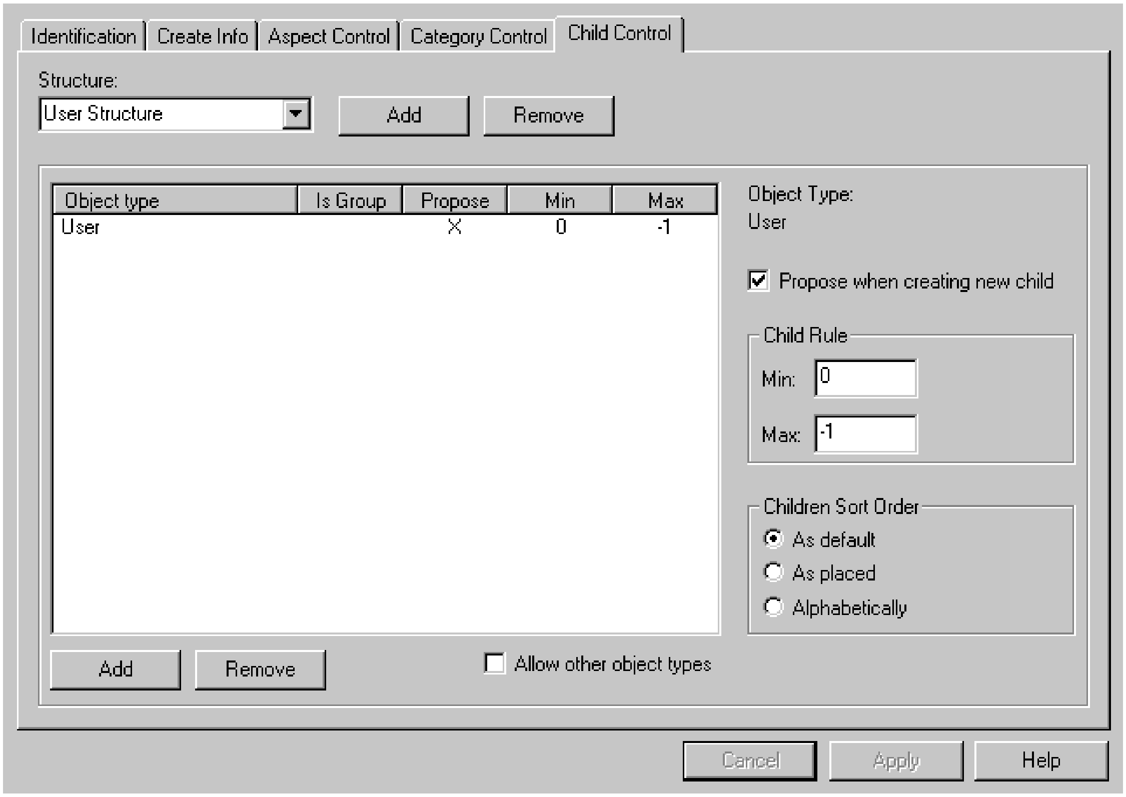
The aspect rule specifies how many aspects of the aspect category there can be on instances of the object type. If the max value is set to -1, the max number of aspects is unlimited.

Allow other categories

This setting is not for a specific aspect category in the list, it is a setting for the object type. If this setting is enabled, then aspects of any aspect category is allowed on instances of the object type. If this setting is disabled, only aspects of an aspect category that exists in the list is allowed on instances of the object type. Also if this setting is disabled, then in the create aspect dialog for an instance of the object type there is no way to show all aspect categories.

3.3.9.4 Child Control Page

On the child control page settings for child objects are determined. The page can be seen in Figure 3-18.



Structure: User Structure

Object type	Is Group	Propose	Min	Max
User		X	0	-1

Object Type:
User

☑ Propose when creating new child

Child Rule
Min: 0
Max: -1

Children Sort Order
● As default
○ As placed
○ Alphabetically

☐ Allow other object types

Figure 3-18. The child control page.

Settings for child objects are made per structure, which means that there exists different child object settings for every structure. To add settings for a structure, press the add button to the right of the structure combobox. To remove all settings for a structure, press the remove button to the right of the structure combobox. The list in the page contains object types that have some settings for the specified structure. To add an object type to the list press the add button below the list, to remove an object type press the remove button below the list. The different settings that can be made for child objects are described below.

Propose when creating new child

When an object type is set to be proposed when creating new child, then in the create object dialog for an instance of the object type only those object types which is set to be proposed are primarily shown in the dialog. If a user wants to see all object types in the dialog he or she must check the show all checkbox.

Child rule

The child rule specifies how many child objects of the object type there can be for instances of the object type. If the max value is set to -1, the max number of child objects is unlimited.

Children sort order

The children sort order specifies in which order the child objects should be displayed for instances of the object type.

Allow other object types

This setting is not for a specific object type in the list, it is a setting for the specified structure. If this setting is enabled, child objects of any object type is allowed for instances of the object type. If this setting is disabled, only child objects of an object type which exists in the list are allowed for instances of the object type. If this setting is disabled, then in the create object dialog for an instance of the object type there is no way to show all object types in the create object dialog.

3.3.9.5 The Object Factory Aspect Category

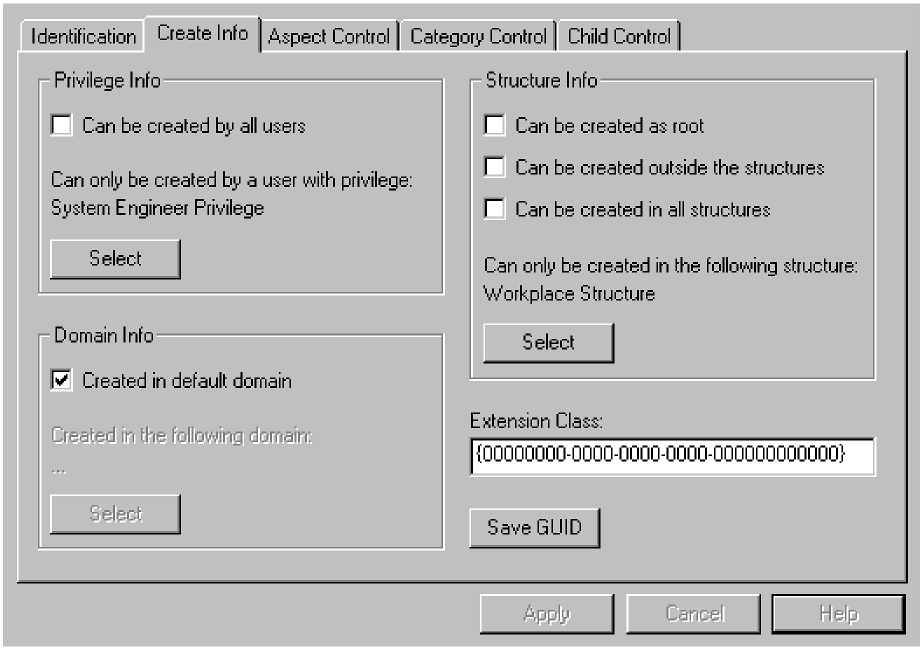
The object factory aspect category is closely related to object types. The functionality it implements is similar to what an object type definition aspect implements. Instead of determining settings for instances of the object type the object factory aspect category determines settings for the object it resides on. It has a little less functionality than the object type definition aspect because some settings are only relevant for object types. Because of this the aspect view tab control only contains the category control page and the child control page. An object factory aspect is typically used on root objects, where it specifies which children that are valid for the structure.

3.3.10 Object Type Example

In this example we are going to make a fictitious workplace object type. Instances of the type will specify how the workplace will be organized, in this case if the application bar or the status bar should be shown in the workplace. The application bar or the status bar is shown if an aspect with a corresponding category exists on the workplace object type instance. Now lets create the object type. First create a new object type definition object as a child to an object type group object in the object type structure and name it workplace. Also create an object icon aspect on the new object and specify a proper icon in its aspect view. This aspect will we later set to be inherited, which will cause all workplace object type instances to have the same object icon. Now on to the settings for this object type.

3.3.10.1 Create Info Page

Set the privilege required to create the object type to system engineer, because only system engineers should be able to specify how the workplace should be organized. Set that instances of the object type can not be created as root, because workplace object type instances should only be created as children to a root object. Set that instances of the object type can only be created in the workplace structure, because it is only in the workplace structure this object type is meaningful. The create info page should look as in Figure 3-19.



Privilege Info

☐ Can be created by all users

Can only be created by a user with privilege:
System Engineer Privilege

Domain Info

☑ Created in default domain

Created in the following domain:
...

Structure Info

☐ Can be created as root

☐ Can be created outside the structures

☐ Can be created in all structures

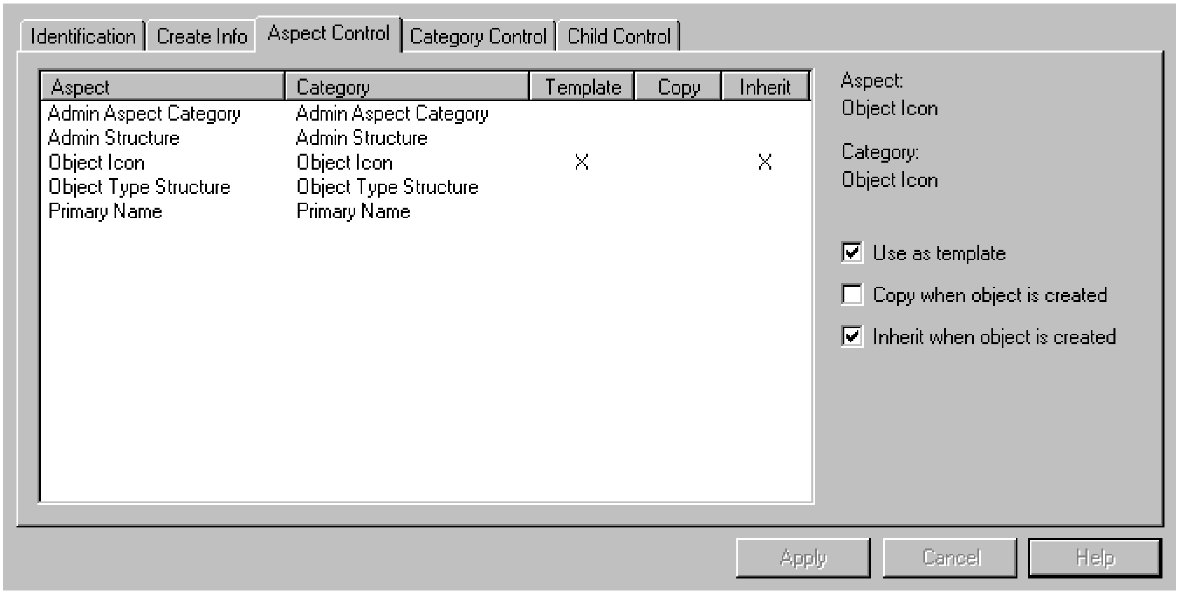
Can only be created in the following structure:
Workplace Structure

Extension Class:
{00000000-0000-0000-0000-000000000000}

Figure 3-19. The create info page for the workplace object type.

3.3.10.2 Aspect Control Page

Here we set the object icon aspect to be inherited, because all instances of this object type should have the same object icon. We also set it to be used as a template, to be able to show the template functionality later in this example. The aspect control page should look as in Figure 3-20.



Aspect	Category	Template	Copy	Inherit
Admin Aspect Category	Admin Aspect Category			
Admin Structure	Admin Structure			
Object Icon	Object Icon	X		X
Object Type Structure	Object Type Structure			
Primary Name	Primary Name			

Aspect:
Object Icon

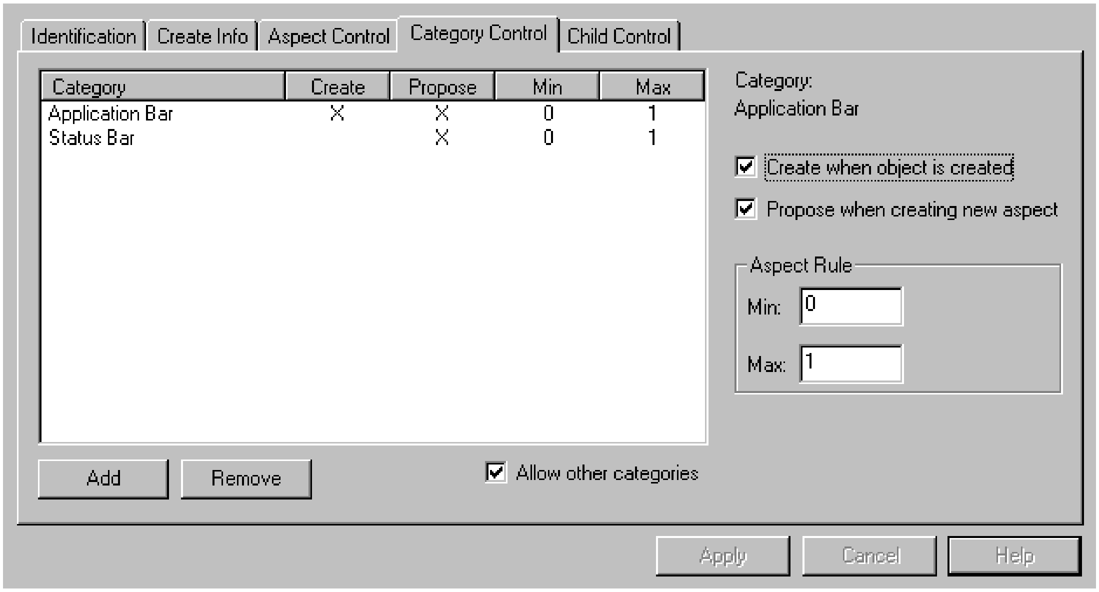
Category:
Object Icon

☑ Use as template
☐ Copy when object is created
☑ Inherit when object is created

Figure 3-20. The aspect control page for the workplace object type.

3.3.10.3 Category Control Page

Here we first add the application bar and the status bar aspect categories to the list. We set the application bar category to be created, to show that functionality. We set it to be proposed, because it should be primarily proposed to a user in the create aspect dialog. We set the aspect rule to min=0 and max=1, because more than one aspect of the application bar category is pointless. We set the status bar category to be proposed and the aspect rule to min=0 and max=1, for the same reasons as for the application bar category. We also set that other categories are allowed, because we want to be able to create other aspects than aspects with category application bar or status bar. The category control page should look as in Figure 3-21.



Category	Create	Propose	Min	Max
Application Bar	X	X	0	1
Status Bar		X	0	1

Category:
Application Bar

☑ Create when object is created

☑ Propose when creating new aspect

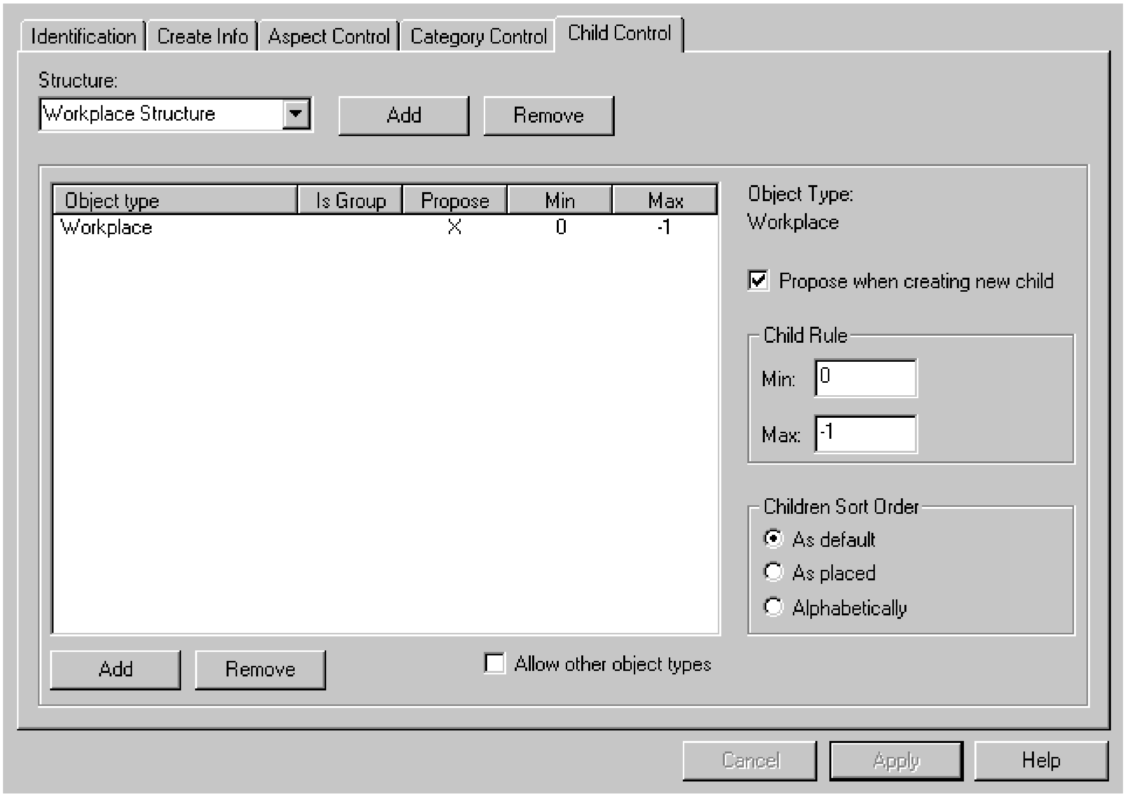
Aspect Rule
Min: 0
Max: 1

☑ Allow other categories

Figure 3-21. The category control page for the workplace object type.

3.3.10.4 Child Control Page

Here we add the structure workplace structure. Also add the object type workplace to the list. We set the workplace object type to be proposed, because it should be primarily proposed to a user in the create object dialog. We set the child rule to min=0 and max=-1 (unlimited) and that other object types are not allowed, a consequence of this is that the only object type that can be created in the workplace structure is the workplace object type. The child control page should look as in Figure 3-22.



Structure: Workplace Structure

Object type	Is Group	Propose	Min	Max
Workplace		X	0	-1

Object Type:
Workplace

☑ Propose when creating new child

Child Rule
Min: 0
Max: -1

Children Sort Order
● As default
○ As placed
○ Alphabetically

☐ Allow other object types

Figure 3-22. The child control page for the workplace object type.

3.3.10.5 Workplace Structure Root Object

Now we must create a root object in the workplace structure because the workplace object type can only be created as a child to an object (see Section 3.3.10.1, Create Info Page above). So create a “no type” object as root in the workplace structure and name it workplaces. Create also an object factory aspect on the object. The child control page in the object factory aspect view should have the same settings as we did for the workplace object type, see Figure 3-22.

3.3.10.6 Workplace Object Type Instances

Now create a workplace object type instance as a child to the root object, as we have defined the only object type that we can create in the create object dialog is the workplace object type. On the instance we can see that it have an application bar aspect which we have defined to be created. We can also see that it have an object icon aspect which we have defined to be inherited. Now create an aspect, in the create aspect dialog we will see that it is only the status bar aspect category that is primarily proposed, because we have an aspect rule that says that it can only exist none or one application bar aspect and there exist already an application bar aspect on the instance. Now create one more object icon aspect on the instance and we will see that it is not an empty aspect, because we defined the object icon aspect on the workplace object type definition object to be used as a template, which means that if we create an aspect with the same aspect category as the template aspect the template aspect is copied to the instance. Try to create a workplace object type instance in another structure, it will not succeed because we have defined that the object type can only be created in the workplace structure.

3.4 Aspects

Aspects are the data specifying the Objects in various ways. There are a number of different aspect categories to use, and they are valid for more or less limited sets of Object types. The following sections describe how to work with aspects.

3.4.1 What Is an Aspect?

Each ABB Object is specified by a number of aspects. The aspects contain information on *all* characteristics of the Object, such as the name of it, its geographical location, its place in the functional structure, users' rights, and so on. Aspects are used to tell the system how the Objects should be treated by the different parts of the Advant system.

When you have created an ABB Object, it has a Name and a Structure aspect attached to it by default. Each Object type has a structure aspect, and a primary name. You can change these characteristics by editing the aspects, i.e the Name and

Structure aspects. An object can also have one *default aspect* defined. This aspect is then automatically displayed when an Object is selected.

There is a set of predefined aspect *categories* that you can choose from when you add aspects to an ABB Object. They can be used in any combination, and an Object can have the same aspect category attached to it a number of times. As is the case when you create Objects, aspects can be created in different ways, so that you can choose to work in a way that you feel comfortable with.

The following section describes how to create aspects for ABB Objects in different ways.

3.4.2 Aspect Context Menu

The Aspect Context menu is reached by right clicking an Aspect in Advant Plant Explorer.The Context Menu contains Plant Explorer specific items that can only be seen in this application together with items that are visible also in Advant Workplace. The Plant Explorer specific items are the first section of the Context Menu, starting with **New Aspect**. Refer to *Advant Workplace - User's Guide* for further information.

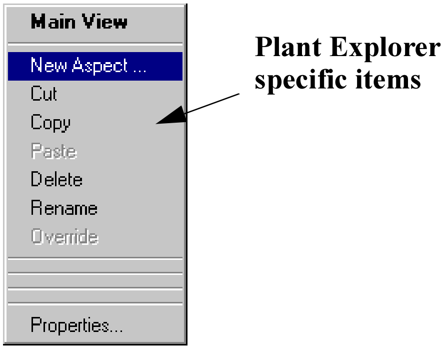


Figure 3-23. Aspect Context Menu

The Plant Explorer specific aspect context menu contains the following items:

New Aspect

Brings up the **New aspect** dialog.

Cut

Cuts the selected aspect and places it on the clipboard.

Copy

Copies the selected aspect to the clipboard.

Paste

Pastes the cut/copied aspect to the aspect list. This operation can only be carried out when the clipboard contents has a valid format.

Delete

Deletes the selected aspect.

Rename

Puts the selected aspect in edit mode.

Override

If the aspect is inherited this operation makes a local copy of the aspect.

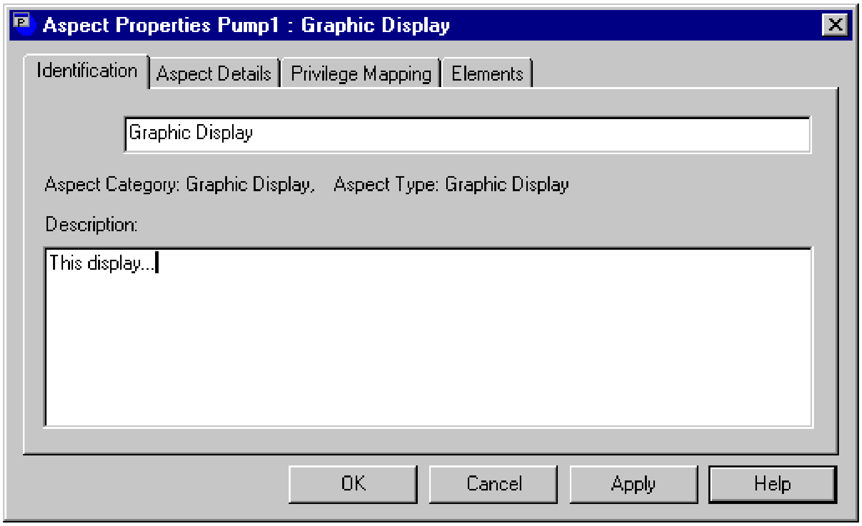
User privileges affect the contents of the context menu.

3.4.2.1 Aspect Property

The Aspect Properties dialog is reached from the Aspect Context Menu. Right click the aspect and choose Properties from the Context menu. Through the Properties dialog you can change data for the Aspect, e.g. make the aspect the default aspect, change name and enter a description.

Identification Tab

On the Identification tab you can change the name of the aspect and you can add a description for the aspect. Enter a new name and a description. Click Apply to make the changes take effect.



Graphic Display

Aspect Category: Graphic Display, Aspect Type: Graphic Display

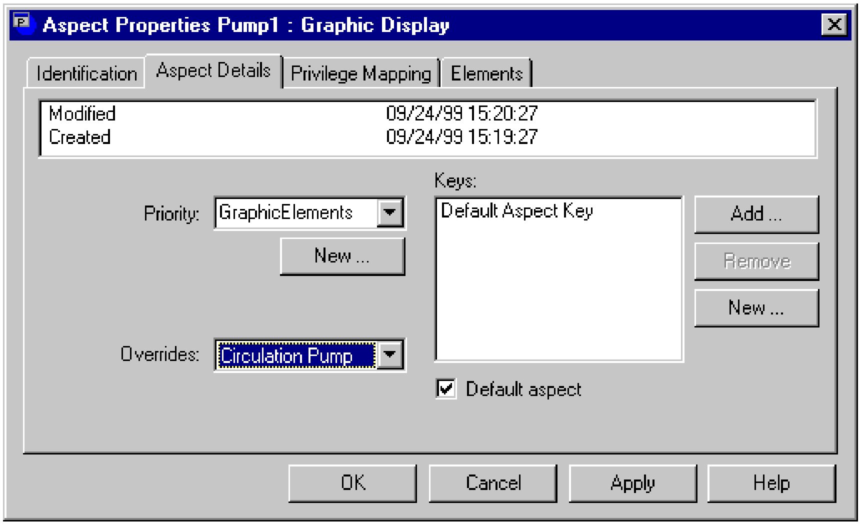
Description:

This display...

Figure 3-24. Identification tab

Aspect Details Tab

On the Aspect Details tab you can find information about when the aspect was last modified and created. You can also make the current aspect the default aspect for the object by checking the Default aspect check box.


Aspect Properties Pump1 : Graphic Display

Modified 09/24/99 15:20:27
Created 09/24/99 15:19:27

Priority: GraphicElements

Overrides: Circulation Pump

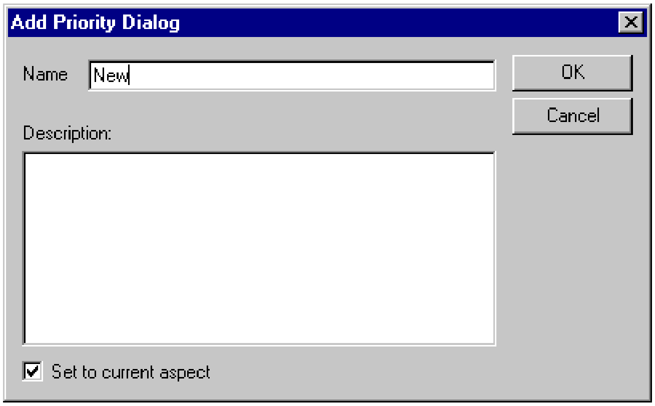
Keys: Default Aspect Key

☑ Default aspect

Figure 3-25. Aspect Details tab

You can also set a Priority for the aspect. Refer to *Advant Workplace Products Administrator's Guide* for more information regarding priority.

Priority contains information about whether the aspect should be preloaded on the client (File Set Distribution). Priority is especially useful for Graphics. Select a priority from the drop down list or create a new by clicking the **New...** button. Enter a name and a description for the Priority. Check the **Set to current aspect** check box if you want to apply the Priority to the current aspect. Click **OK** when ready.



Name: New

Description:

☑ Set to current aspect

Figure 3-26. The Add Priority dialog

You can customize the aspect by adding Keys to the aspect. Keys attached to the aspect are displayed in the Keys text box, see Figure 3-25. Add new Keys by clicking the **Add** button. This will display the Add Keys dialog. Select suitable Keys in the list displayed. The most useful Key is the **Default Aspect Key**, which makes the aspect the default aspect for the object. When you have chosen all Keys, click **OK**. Refer to *Advant Workplace Products Administrator's Guide* for a description of each Key.

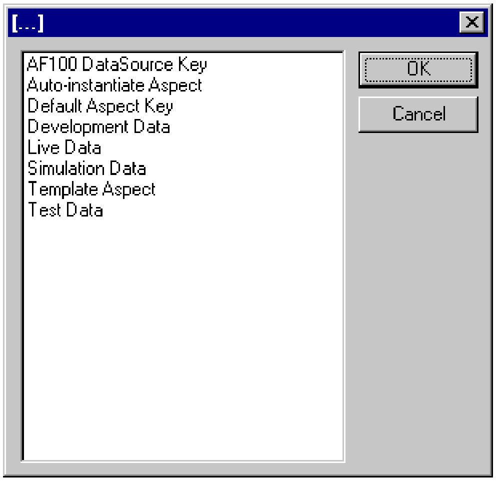


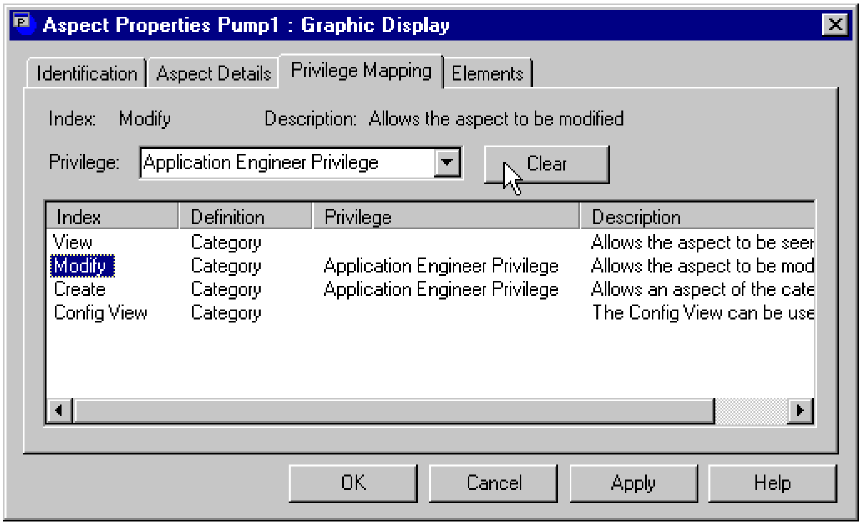
Figure 3-27. Add Keys dialog

By selecting one key in the list on the Aspect Details tab and then pressing the **Remove** button, the selected Key will be removed from the aspect. By clicking the **New...** button, you can add new Keys the same way as you added new Priorities, see Figure 3-26.

Privilege Mappings Tab

The Privilege Mappings tab displays what privileges you need to view, modify, create and look at the configuration view of the aspect. Default privileges are displayed in this dialog, but they can be changed or added if you have administrator's privileges. Select an Index and then select a privilege in the

Privilege drop down list. If you want to change a privilege back to default, click the **Clear** button. Click **Apply** to save the changes.



Index: Modify

Description: Allows the aspect to be modified

Privilege: Application Engineer Privilege

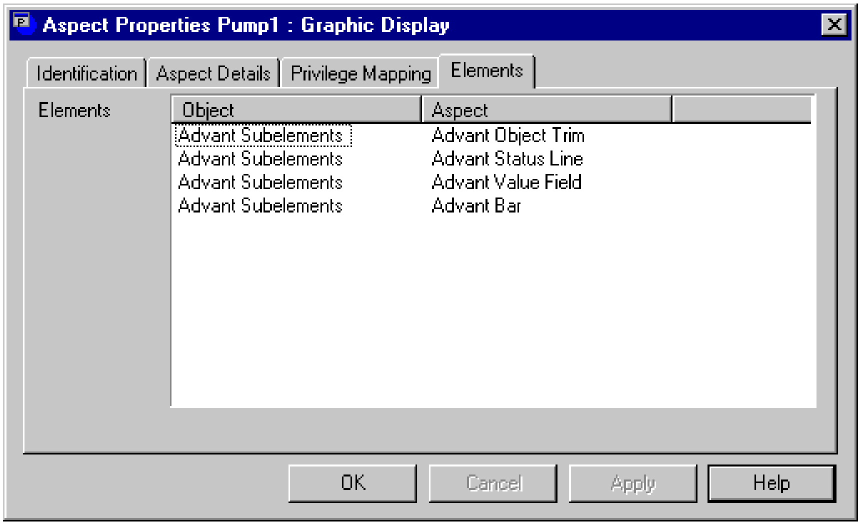
Index	Definition	Privilege	Description
View	Category		Allows the aspect to be seen
Modify	Category	Application Engineer Privilege	Allows the aspect to be mod
Create	Category	Application Engineer Privilege	Allows an aspect of the cate
Config View	Category		The Config View can be use

Figure 3-28. Privilege Mappings dialog

Privileges are further described in *Advant Workplace Products Administrator's Guide*.

Elements Tab

Aspects of the type Graphic Display have this tab displayed in the Properties dialog. For other aspects this tab is not visible. In this dialog you can see what objects and elements that are used in the display without opening the actual graphics.



Object	Aspect
Advant Subelements	Advant Object Trim
Advant Subelements	Advant Status Line
Advant Subelements	Advant Value Field
Advant Subelements	Advant Bar

Figure 3-29. Elements dialog

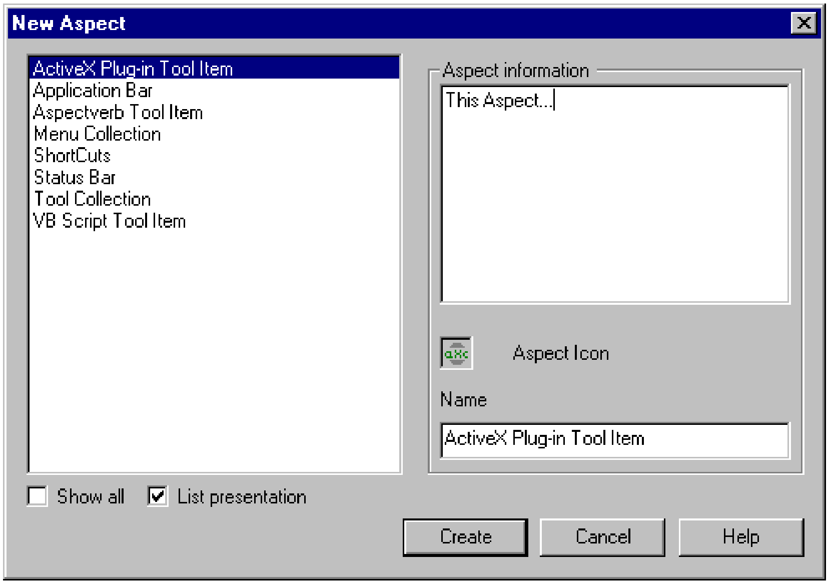
Refer to *Advant Graphics User's Guide* for further information.

3.4.3 Creating an Aspect

To add an aspect to an ABB Object, do the following:

1. Make sure you have selected (clicked) the Object for which you want to add a new aspect.
2. Click the **New Aspect** button. A list of available aspect categories is displayed. The aspect list is filtered according to the Object and the structure that you are

working with. The aspects are listed in a tree structure according to the existing aspect categories.



Aspect information: This Aspect...

Name: ActiveX Plug-in Tool Item

☐ Show all ☑ List presentation

Figure 3-30. New Aspect dialog

3. Select a category. The aspects listed are those *suggested* for the Object type you are creating it for, but you can view all *valid* aspects for the Object type by selecting **Show all**.
4. If you like, you can also add a description for the aspect and a name for it. If you do not set a name, the aspect category name will be displayed in the aspect list.
5. Click **Create**. The aspect you have just created is presented as the topmost aspect in the list.

Aspects can also be created using the context menu:

1. Right-click anywhere within the aspect area.

2. Select **New Aspect** from the context menu that appears. The New Aspect dialog is displayed.
3. Select the aspect category from the list of suggested aspects, or view all valid aspect categories by selecting **Show all**.
4. Enter a name and a description of the aspect. This information is optional.
5. Click **Create**. The new aspect is displayed as the topmost aspect in the list.

3.4.4 Copying an Aspect

To copy an aspect, follow these steps:

1. Right-click the aspect you want to copy. The aspect context menu will appear.
2. Select **Copy**.
3. Right-click the Object to which you want to copy the aspect.
4. Select **Paste**.

3.4.5 Editing an Aspect

To gain access to the edit view of an aspect, double-click the aspect in the aspect list. The aspect view will be displayed in an overlapping window. If the preview option is selected, the aspects can also be edited in the preview area. To see the previews displayed, click the Preview Toggle Button on the tool bar.

3.4.6 Overriding an Aspect

The override function is very useful when an object has an inherited aspect which you would like to modify only for the specific instance.

Right-click on an inherited aspect and select **Override** from the context menu to create a local copy of the aspect.

3.5 Building Structures

This section describes how to build the structures that make up the different views of your project.

3.5.1 What Is a Structure?

Structures are the graphical representations of the connections that exist between ABB Objects. Since there is usually a number of relations between Objects, they are parts of several structures. The structures themselves look a lot like the structure trees that you work with in Windows NT Explorer. In Windows NT Explorer there are folders that contain files; in Advant Plant Explorer there are ABB Objects holding child Objects. The difference between the structures of Advant Plant Explorer and Windows NT Explorer is that in Advant Plant Explorer there are a number of structures representing the same plant, so that each Object can be placed in different structures. In Advant Plant Explorer, there is a list of predefined structures that can be applied to a project model.

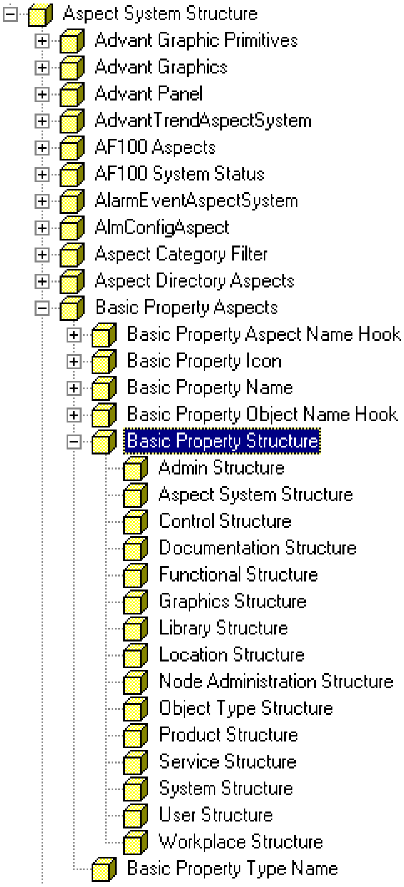
3.5.2 Creating a Structure

In Advant Plant Explorer, there is a predefined set of structures that you can choose from to add to your plant model.

To create a new structure, follow the steps below:

1. Select the **Aspect System structure** from the Structure Selector.

2. Select the **Basic Property Aspects** aspect system and the **Basic Property Structure** aspect category. There you can find all existing structures.

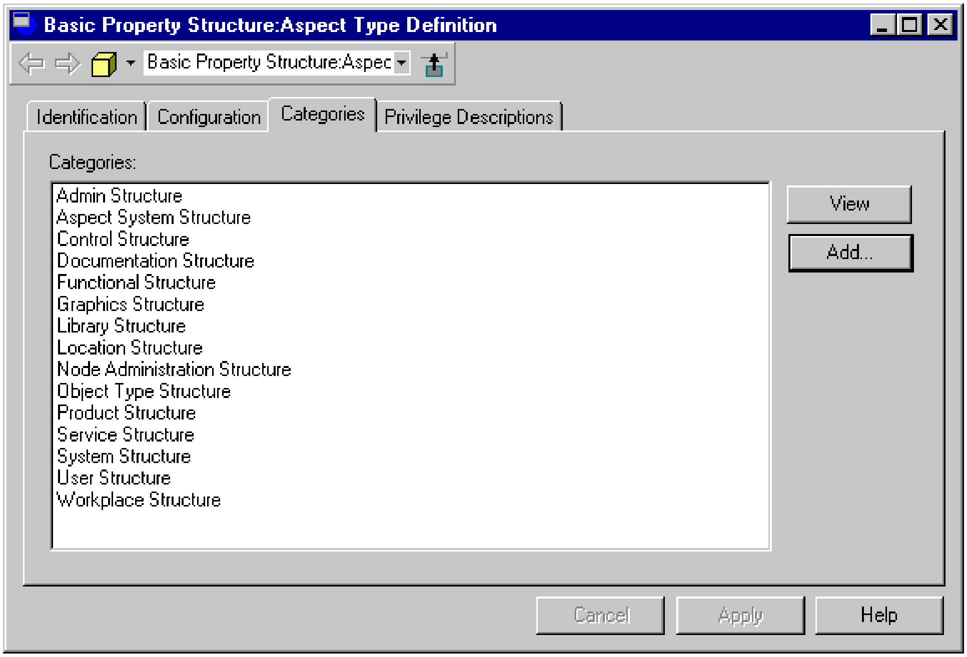


- Aspect System Structure
  - Advant Graphic Primitives
  - Advant Graphics
  - Advant Panel
  - AdvantTrendAspectSystem
  - AF100 Aspects
  - AF100 System Status
  - AlarmEventAspectSystem
  - AlmConfigAspect
  - Aspect Category Filter
  - Aspect Directory Aspects
  - Basic Property Aspects
    - Basic Property Aspect Name Hook
    - Basic Property Icon
    - Basic Property Name
    - Basic Property Object Name Hook
    - Basic Property Structure
      - Admin Structure
      - Aspect System Structure
      - Control Structure
      - Documentation Structure
      - Functional Structure
      - Graphics Structure
      - Library Structure
      - Location Structure
      - Node Administration Structure
      - Object Type Structure
      - Product Structure
      - Service Structure
      - System Structure
      - User Structure
      - Workplace Structure
    - Basic Property Type Name

Figure 3-31. Aspect System structure

3. Open the configuration view for the **Aspect Type Definition** aspect.

4. Select the **Categories** tab.

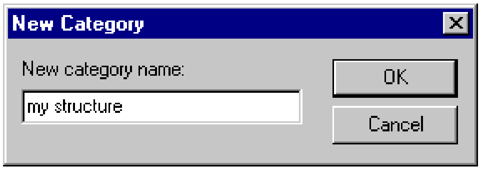


Categories:

Admin Structure
Aspect System Structure
Control Structure
Documentation Structure
Functional Structure
Graphics Structure
Library Structure
Location Structure
Node Administration Structure
Object Type Structure
Product Structure
Service Structure
System Structure
User Structure
Workplace Structure

Figure 3-32. Aspect Type Definition dialog

5. Click **Add** to enter a new category.
6. Enter a name for the new structure.
7. Click the **OK** button.



New category name: my structure

Figure 3-33. Add new category

8. Verify that the new structure is included in the Structure Selector and that you can select it.

For more information on available structures, refer to Appendix A, Advant Structures.

Chapter 4 Operation

4.1 Getting Started

The following are the major steps in the workflow of operating Advant Plant Explorer.

1. Browsing a structure. When you are looking for a particular ABB Object, browsing the structures of the project model is a way to get an insight into the organization of the model. See Section 4.2, Working with the Object Tree
2. Setting a Temporary Root. Making an ABB Object a Temporary Root Object limits your view of the structure, so that you can focus on the parts of the structure that you are working with for the moment. See Section 4.3, Setting a Temporary Root.
3. Working with aspect filters. Using aspect filters enables you to limit the information about aspects attached to each Objects, so that you can view the aspects that are relevant for you. See Section 4.4, Aspect Filters
4. Viewing aspects. Aspects of Objects have different kinds of views attached to them; aspects having to do with trends and changes for an Object are represented by graphic views, structure aspects have views showing a structure etc. The aspect views can be displayed in various ways, depending on how you choose to work with them. See Section 4.5, Views and actions
5. Working with the **Find** tool. When you need to quickly find an ABB Object in a structure, the Find tool is more useful than Browsing structures. The Find tool allows you to simply enter a search string, which can be an Object name or name path, for the Advant System to go by, and you will quickly find the Object you are searching for. See Section 4.6, Using the Find Tool

4.1.1 Application Start-up

When using Advant Plant Explorer inside Advant Workplace, you start it by selecting **Plant Explorer...** from the Tools menu. You can also start it by clicking the Advant Plant Explorer icon displayed in Advant Workplace application Bar.

When you use it as a stand-alone unit, the application can be started by selecting **Start > Program > Advant > Plant Explorer.**

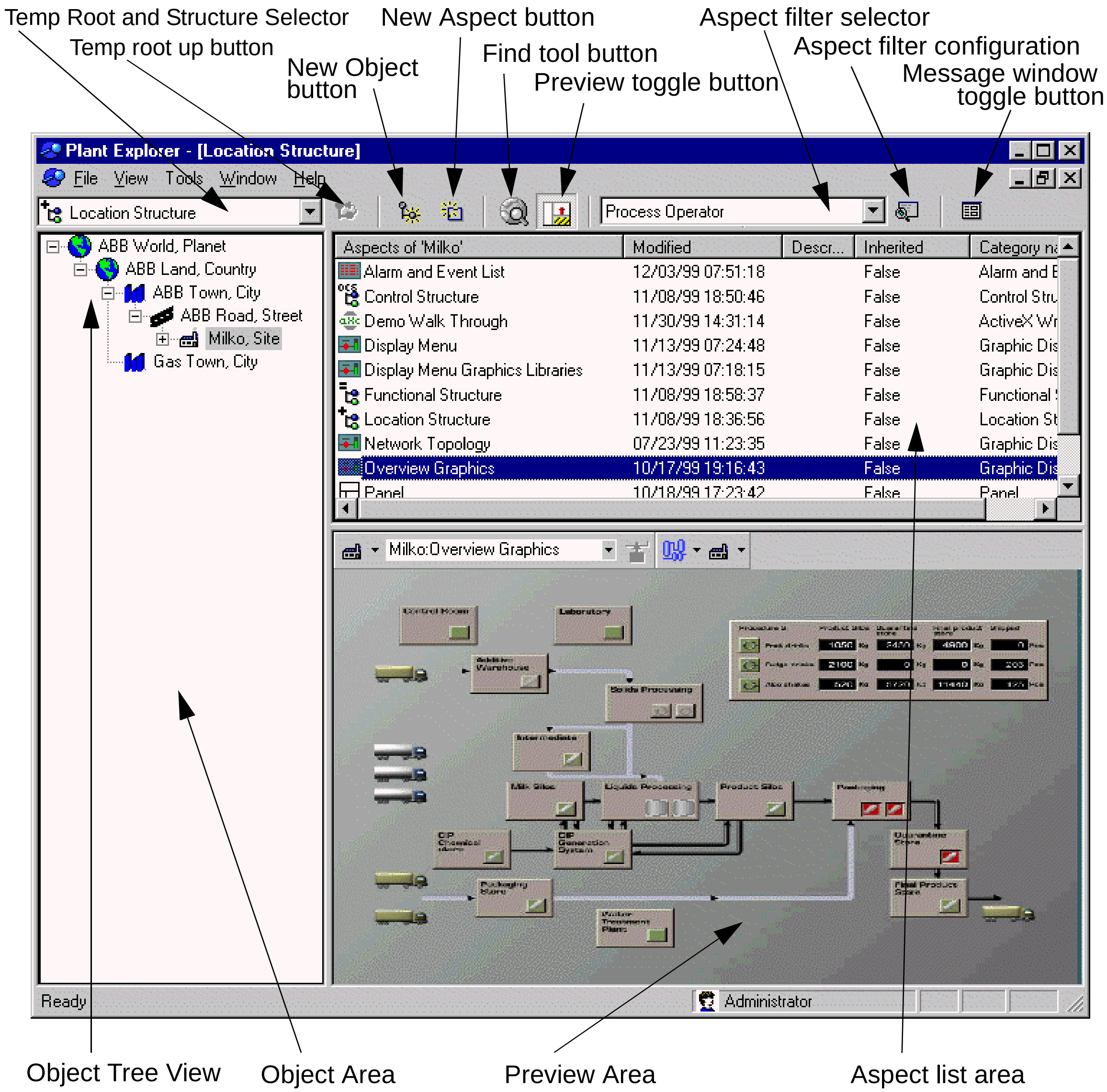
4.2 Working with the Object Tree

You use the Structure Browser to view the structures in your plant or project model. Select the structure you want to browse from the Temporary Root and Structure Selector on the upper toolbar.

4.2.1 Main Object Tree Window

You use the Object tree view to browse the structures of your plant, and to search for Objects contained in the structures. The following operations can be carried out from the Object tree view window:

- Browsing a structure. See Section 4.2.2, Browsing a Structure
- Setting a Temporary Root. See Section 4.3, Setting a Temporary Root
- Selecting an ABB Object. See Section 4.2.2, Browsing a Structure
- Viewing an aspect. See Section 4.5, Views and actions
- Performing a Find operation. See Section 4.6, Using the Find Tool



Aspects of 'Milko'	Modified	Descr...	Inherited	Category na
Alarm and Event List	12/03/99 07:51:18		False	Alarm and E
Control Structure	11/08/99 18:50:46		False	Control Stru
Demo Walk Through	11/30/99 14:31:14		False	ActiveX Wr
Display Menu	11/13/99 07:24:48		False	Graphic Dis
Display Menu Graphics Libraries	11/13/99 07:18:15		False	Graphic Dis
Functional Structure	11/08/99 18:58:37		False	Functional
Location Structure	11/08/99 18:36:56		False	Location St
Network Topology	07/23/99 11:23:35		False	Graphic Dis
Overview Graphics	10/17/99 19:16:43		False	Graphic Dis
Panel	10/18/99 17:23:42		False	Panel

Figure 4-1. Stand-alone Advant Plant Explorer window

The main Object tree view window has the following fields, buttons and menus for operating Advant Plant Explorer:

4.2.1.1 Temporary Root and Structure Selector

The temporary root and structure selector is a drop-down list from which you can select the structure to browse, and for selecting a Temporary Root.

4.2.1.2 Temporary Root up Button

The temporary root up button is used to move up one level to the next level in the structure you are browsing.

4.2.1.3 Find Tool Button

When you click this button, the Find dialog box will be displayed, enabling you to search for Objects.

4.2.1.4 Preview Toggle Button

This button is used for displaying the preview area on the main window. If the preview option is switched off, a view of an aspect that you want to see can be displayed in an overlapping window.

4.2.1.5 Aspect Filter Selector

Use this list to filter the list of aspects presented for an Object.

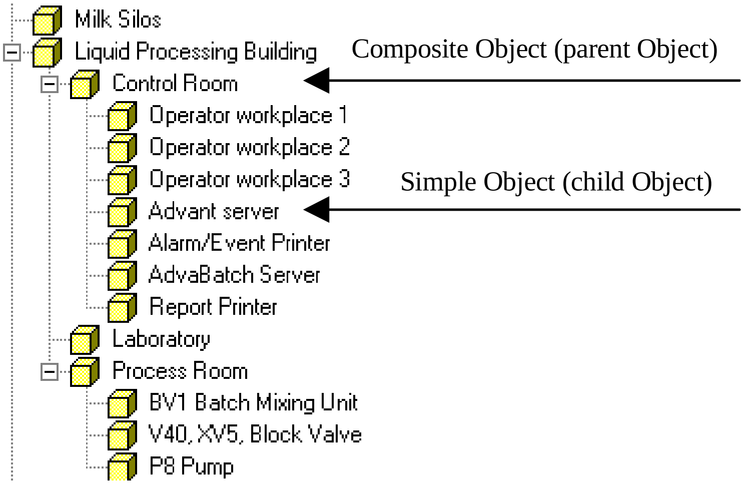
4.2.2 Browsing a Structure

To begin browsing a structure, follow these steps:

1. Select a structure from the drop-down list. The structure will be displayed in the Object tree view area.
2. You can now browse the structure by clicking Objects and nodes. For each Object you select (click), a list of associated aspects is displayed.

3. The structure you select is shown in its compressed state. Click the node (that is, the + sign) to expand the structure. The + sign means that an Object contains other Objects, or substructures. The Advant structures resemble the structures found in the Windows NT Explorer, where each folder containing other folders are marked with a + sign.
   To see all sub-structures in a structure, press the * button on your keyboard.
4. By clicking your way through the hierarchies you can search for particular ABB Objects and see their connections to other Objects in the structures.

The structures may contain both *simple* and *composite* Objects. Composite Objects contain one or more simple Objects. A composite Object can also be called a *parent* Object, that has a number of *children*.



Composite Object (parent Object)

Simple Object (child Object)

Figure 4-2. Simple and composite Objects in a structure

A parent, or composite Object, is displayed with the same + sign as is used in Windows NT Explorer to show that a folder contains other folders. In Advant Plant Explorer, the + sign means that an Object contains other Objects. The + sign means that a substructure exists, and it is shown in its collapsed state. Clicking the node, that is, the box with the + sign, expands the substructure, so that the objects contained in the parent Object are displayed.

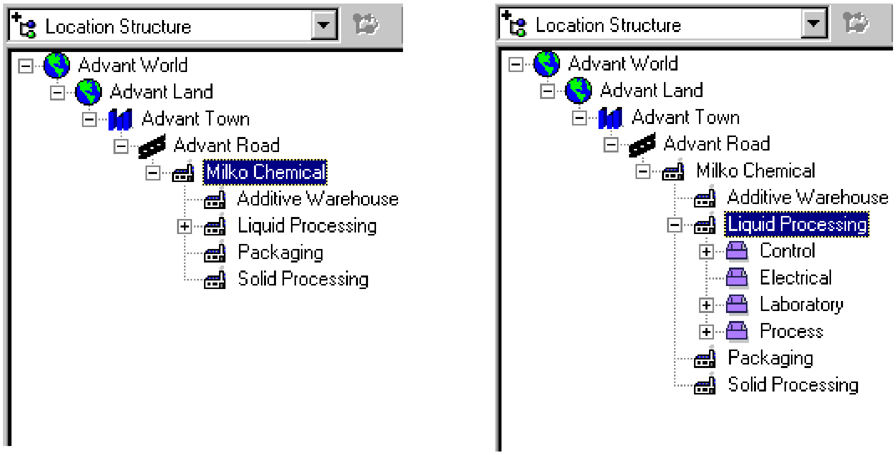


Figure 4-3. An Object that contains sub-structures

In the structure browser, you can see what aspects are associated with a particular Object if you click the Object in the tree view. The aspects will then be shown in the aspect list. If you have selected more than one Object, the aspect list will be empty.

If you have selected an Object, and you select another structure to browse, the Object you have clicked is still selected.

4.3 Setting a Temporary Root

Structures may sometimes be very complex. Because of this, it may be difficult to get an overview of the parts of a structure that you are interested in. To avoid this, you can set a *temporary root*, which means that the Object whose children or substructures you are browsing is set to be the root, that is, become the topmost

Object of the hierarchy. This works exactly like when you set a temporary root in the folder hierarchies in Windows NT Explorer.

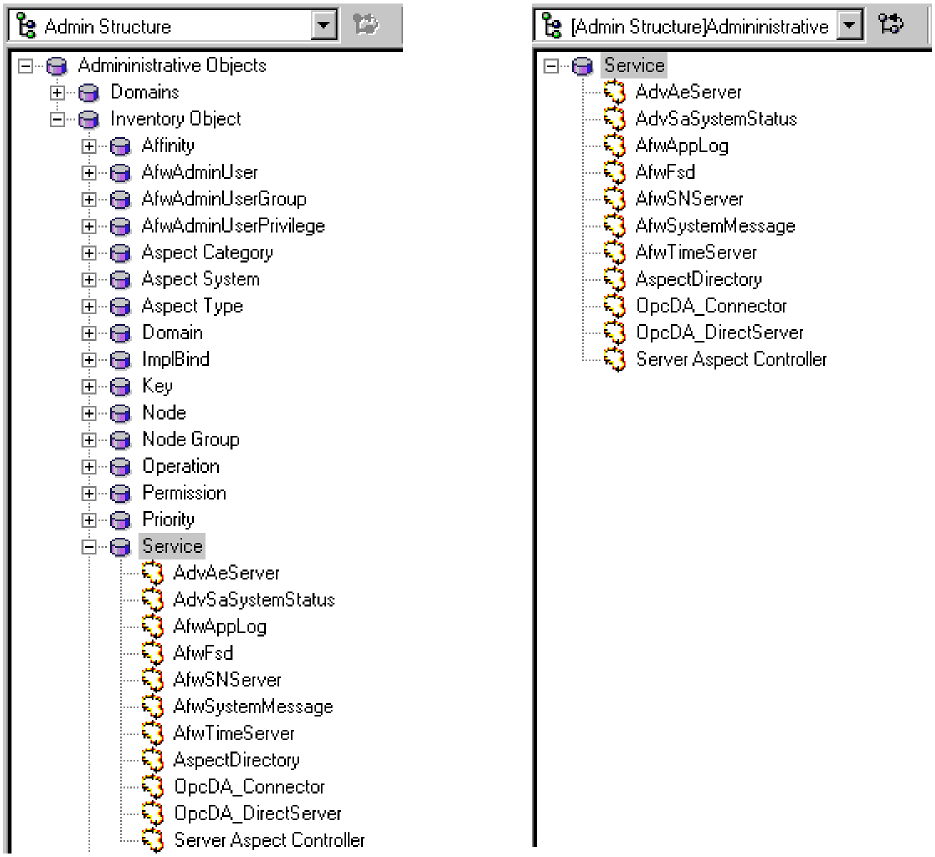


Figure 4-4. To limit your view to a sub structure, you can set a temporary root

A temporary root can be set in three ways:

- By using the Set Temporary Root function and Structure selector. Select one of the names in the selector path and then select Set Temporary Root from the Object Tree context menu.
- By clicking the Temp Root Up button, which sets the temporary root up one

level above the present Root node.

- By right-clicking a node in a structure and selecting Set Temporary Root from the context menu that appears.

4.4 Aspect Filters

When you select an Object, you will see a list of associated aspects displayed in the aspect list. If the **AutoSelect** function is checked in Advant Plant Explorer User Profiles dialog (see Section 3.2, User Profiles for Advant Plant Explorer), the aspect that was selected most recently will be selected when an aspect list is displayed.

4.5 Views and actions

A view is a display of an aspect of an ABB Object. In the views you can see graphic representations of the Objects in the plant, as well as information on the other aspects.

Aspect views of ABB Objects can be viewed in different ways. They can be presented in the preview part of the Advant Plant Explorer window, in the display area of an Advant Workplace window or as an overlapping display. The views can display both static and dynamic data, so that you can have different windows presenting changes in different parts of the processes in the plant.

Aspects can have several views e.g. one view for configuration (**Config View**) and another for presentation (**Main View**). **Main View** is normally the default view but it can also be **Config View** for those aspects which lacks a **Main View**. Aspects which lacks views can not be displayed in a display area or preview area but it may be possible to perform an action like **Open** on the aspect which will e.g. launch the aspect in a separate window.

- The aspect preview area in Advant Plant Explorer is displayed by clicking the **Preview** button on the tool bar. The default view for the selected aspect is then displayed in the lower right-hand part of the Advant Plant Explorer window.
- Each ABB Object has a context menu that you can use to view the aspects of it. Right-clicking an ABB Object displays the context menu, and the menu includes a list of all aspects of the Object as well as some of the actions possible on the aspects. You can select the aspect that you want to see. The aspect you select will be seen as an overlapping display, if the aspect has a

view.

- Double-click on an aspect in the aspect list to perform the default action on the aspect which normally is to open the default view in an overlapping display. There is no hard limit on the number of aspects that you can have displayed simultaneously.
- You can also right click an aspect in the aspect list to bring up the context menu. On the context menu you can select which view of the aspect to display or perform actions on the aspect like **Edit** for a Graphic Display.

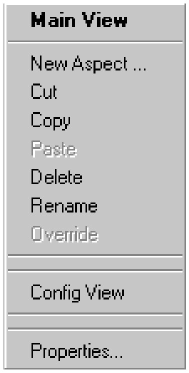


Figure 4-5. Example of views on the context menu

4.5.1 View Selector

For aspects that have more than one view, use this drop-down selector to choose the view to see. The view selector can be found in the display bar on top of the displayed aspect view. Note that the views included in the view selector list as well as the context menu are dependent of you user privileges.

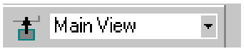


Figure 4-6. View Selector

4.6 Using the Find Tool

When you want to have fast access to one particular Object or Objects sharing the same name, the **Find Tool** is the most efficient way to search the structures. Use the Find Tool to give the name of an Object or the path to an Object as a search criterion and instantly find the Object that you are looking for. It is also possible to search for Objects of a particular Object type.

You can search for Objects globally or in a certain structure that you have set. In global search, all Objects in the Advant system are considered, so that you can find Objects even if they are not placed in a structure.

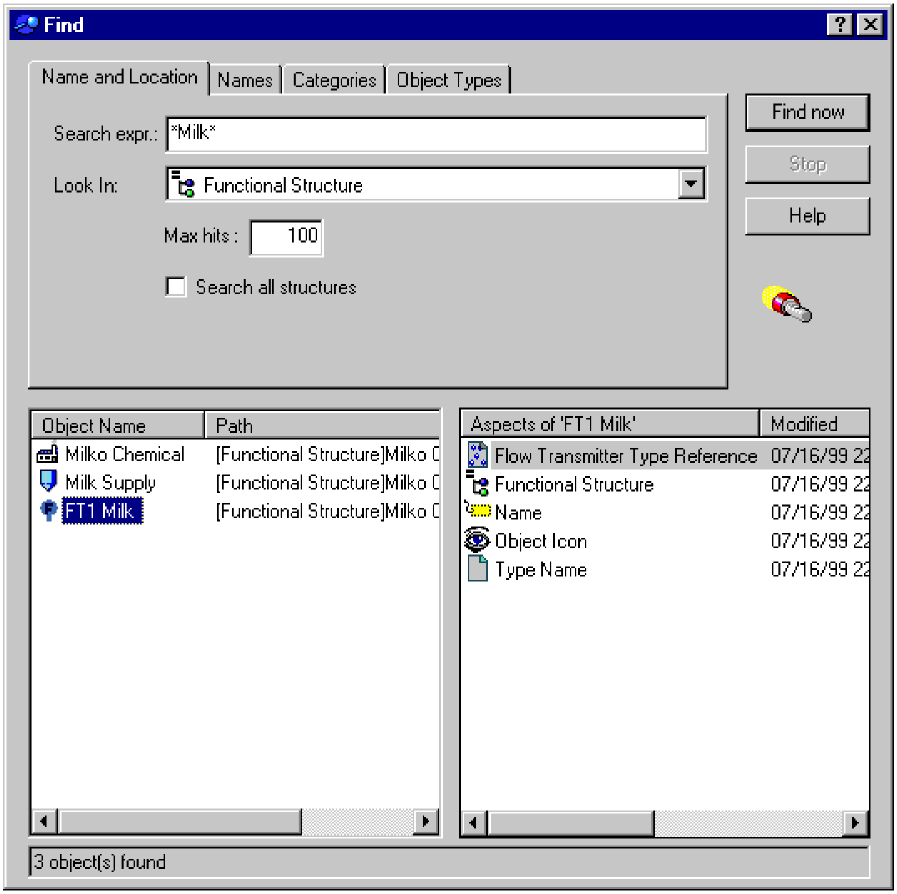
In the Find Tool you can also use *wild card* searches, if you are uncertain of the name of an Object you are searching for. Use the “*****” character as a substitution for zero, one or a number of characters, and the “**?**” sign to substitute exactly one character.

To open the Find Tool, click on the Find button, or choose **Find...** from the Tools menu.

Name and Location Tab

To use the Find mode when searching for Objects, follow these steps:

1. On the tabular, click the **Find** button to start the Find Tool. The Find dialog is displayed.



Search expr.: *Milk*

Look In: Functional Structure

Max hits : 100

☐ Search all structures

Object Name	Path
Milko Chemical	[Functional Structure]Milko C
Milk Supply	[Functional Structure]Milko C
FT1 Milk	[Functional Structure]Milko C

Aspects of 'FT1 Milk'	Modified
Flow Transmitter Type Reference	07/16/99 22
Functional Structure	07/16/99 22
Name	07/16/99 22
Object Icon	07/16/99 22
Type Name	07/16/99 22

3 object(s) found

Figure 4-7. Find dialog

2. Enter an expression in the **Search expression** box, for the Object to search for. Use wild card searches to locate Objects without having to state the exact name

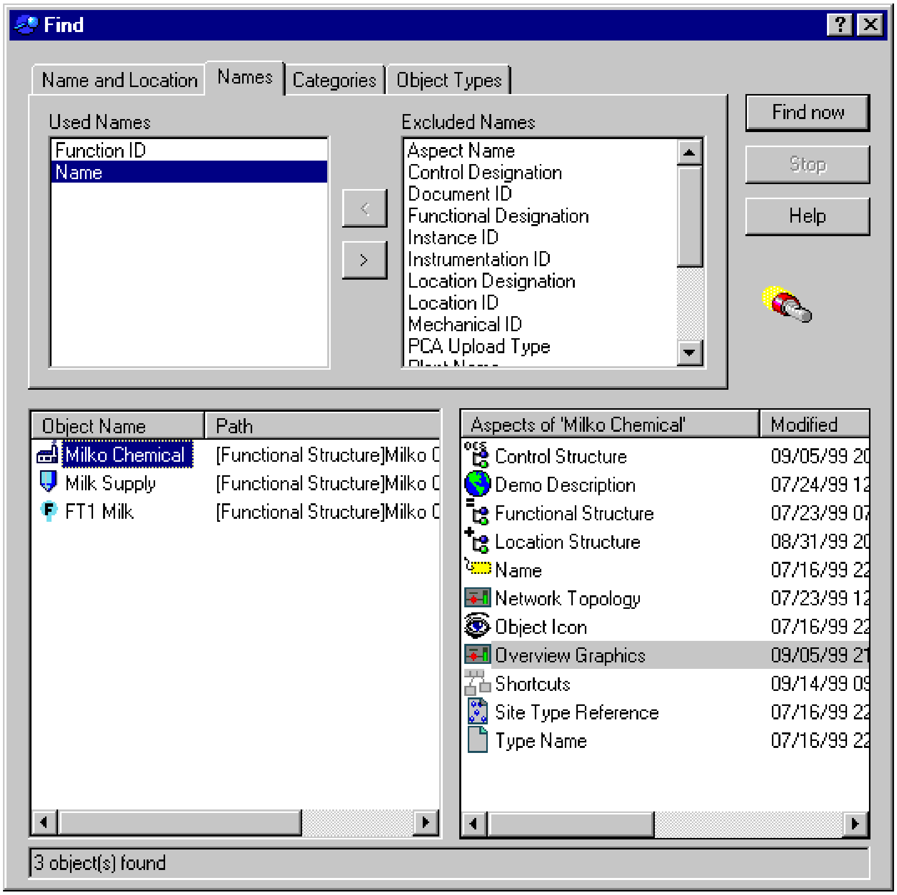
for it. You can confine the search to one particular structure by selecting it from the **Look in** drop-down list in the dialog. If you want to search among all Objects, select the **Search all Objects** check box.
The length of the list of matching Objects can be limited by setting a **Max hits** number.

3. Click the **Find now** button.
4. The result of the search is presented in the lower part of the window.

Names Tab

You can also search for name categories that are used. To search for name categories, do the following:

1. In the Find dialog, click the Names tab. This brings up the name category search dialog.



Used Names
- Function ID
- Name

Excluded Names
- Aspect Name
- Control Designation
- Document ID
- Functional Designation
- Instance ID
- Instrumentation ID
- Location Designation
- Location ID
- Mechanical ID
- PCA Upload Type

Object Name	Path
Milko Chemical	[Functional Structure]Milko C
Milk Supply	[Functional Structure]Milko C
FT1 Milk	[Functional Structure]Milko C

Aspects of 'Milko Chemical'	Modified
Control Structure	09/05/99 20
Demo Description	07/24/99 12
Functional Structure	07/23/99 07
Location Structure	08/31/99 20
Name	07/16/99 22
Network Topology	07/23/99 12
Object Icon	07/16/99 22
Overview Graphics	09/05/99 21
Shortcuts	09/14/99 09
Site Type Reference	07/16/99 22
Type Name	07/16/99 22

3 object(s) found

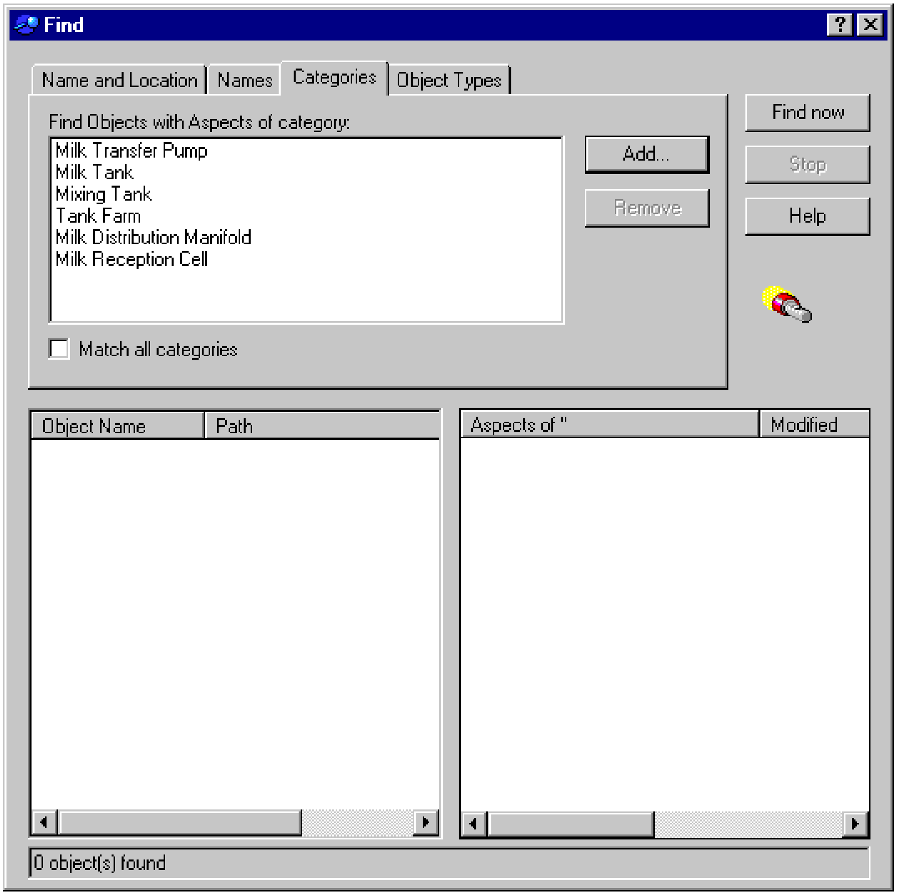
Figure 4-8. Find Name Categories tab

2. Select a name category that you want to search for, from the **Excluded Name** list, and use the left arrow button to place it in the **Used Names** list.
3. Repeat the previous step to include more name categories in your search.
4. Click **Find now** to start searching.
5. The result of the search is presented in the lower part of the window.

Categories Tab

You can also search for objects that hold aspects of a certain aspect category. To search for objects with certain aspect categories, do the following:

1. In the Find dialog, click the Categories tab. This brings up the categories search dialog.



Find Objects with Aspects of category:

Milk Transfer Pump
Milk Tank
Mixing Tank
Tank Farm
Milk Distribution Manifold
Milk Reception Cell

☐ Match all categories

0 object(s) found

Figure 4-9. Categories Tab

2. Add an aspect category that you want to search for, by clicking the **Add** button. This brings up the **Select Aspect Categories** dialog:

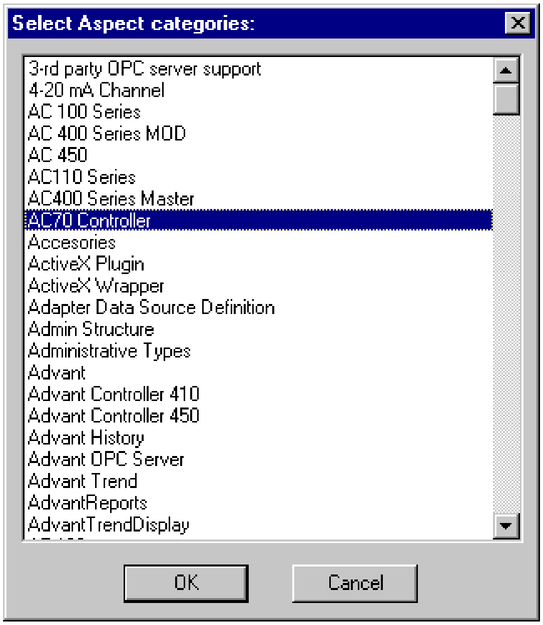


Figure 4-10. Select Aspect Categories dialog

3. Select the categories you want to search for and click **OK**.
4. Click **Find now** to start searching.
5. The result of the search is presented in the lower part of the window.

Object Types Tab

You can also search for objects of a certain object type. To search for objects with a certain object type, do the following:

1. In the Find dialog, click the Object Types tab. This brings up the object types search dialog. This search follows exactly the same procedure as when searching for categories.

2. Add the object types that you want to search for, by clicking the **Add** button. This brings up the **Select Aspect Categories** dialog:
3. Select the Object Types you want to search for and click **OK**.
4. Click **Find now** to start searching.
5. The result of the search is presented in the lower part of the window.

Chapter 5 Maintenance

5.1 Preventive Maintenance

Advant Plant Explorer is a part of the Advant Workplace Products software package. Perform any required maintenance according to the instructions in the *Advant Workplace Products Administrator’s Guide*.

Appendix A Advant Structures

A.1 Advant Structures

This section gives an overview of the basic structures that are present in Advant Plant Explorer when the system has been installed. The system comes with twelve predefined structures. The set of structures may be extended by an arbitrary number of structures by anyone using the Advant system. The structures described have, in some cases, been filled with more data than when first installed. Refer to *Advant Workplace Engineering Methods* to read more about structures.

The structures described in this section are needed for correct system operation and must not be removed or modified in any substantial way. Normally, these structures enforce their own rules, for example what can be inserted.

Each structure is described in more detail in the sections below. The Advant system consists of three primary structures:

- Functional Structure
- Location Structure
- Control Structure.

These structures are primary structures because it is assumed that most Operators and Application Engineers will perform most of their work within these structures.

Some additional and important structures are the:

- Admin Structure
- Object Type Structure
- Aspect System Structure.

These structures contain the objects that are used to configure and control the system itself.

The administration structures are all structures that are pre-created and which may contain only objects that are placed in the system domain. These objects typically have restricted access, requiring System or Application Engineer rights to allow modifications. A set of additional administration structures exists. These structures all have different purposes and they control much of the Advant system behavior.

The addition administrative structures are:

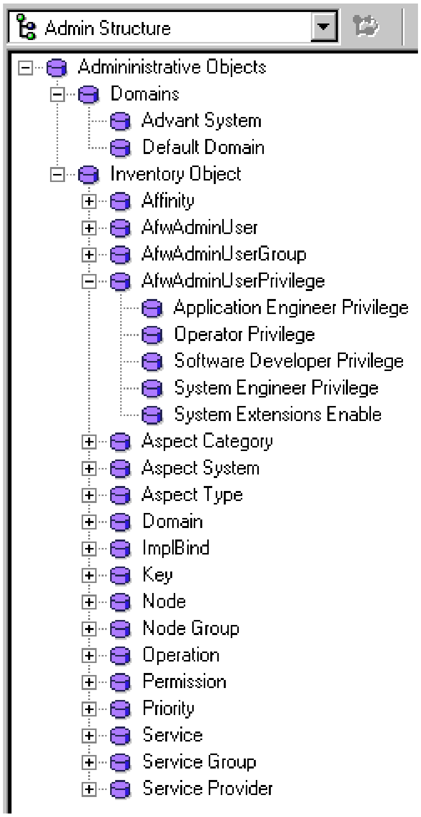
- The Service Structure which holds service definitions.
- The Workplace Structure which contains the workplace definitions of a system.
- The User Structure in which all user groups and users are placed.
- The Node Administration Structure which holds all node groups (sometimes called networks) and nodes defined in the system.
- The Graphics Structure which defines graphic primitives and subelements.

Each structure is implemented as an aspect category and has therefore its own authority control etc. Every structure with objects has at least one root object. A structure may have multiple root objects, and these are displayed as top-level objects in Advant Plant Explorer.

A.1.1 Admin Structure

The system contains several administrative structures. One structure exists which is called the *Admin Structure*. This structure contains an inventory of all admin objects in the system placed under an object called *Inventory*.

The *Admin structure* uses the Administrative Objects root object as its root. It contains two objects, called *Domains* and *Inventory.* The *Inventory* object contains all aspect type objects of the aspect types that implement an admin object as its child. This means that all aspect systems, aspect types, affinities etc. are easily found in one place. See Figure A-1.



Admin Structure

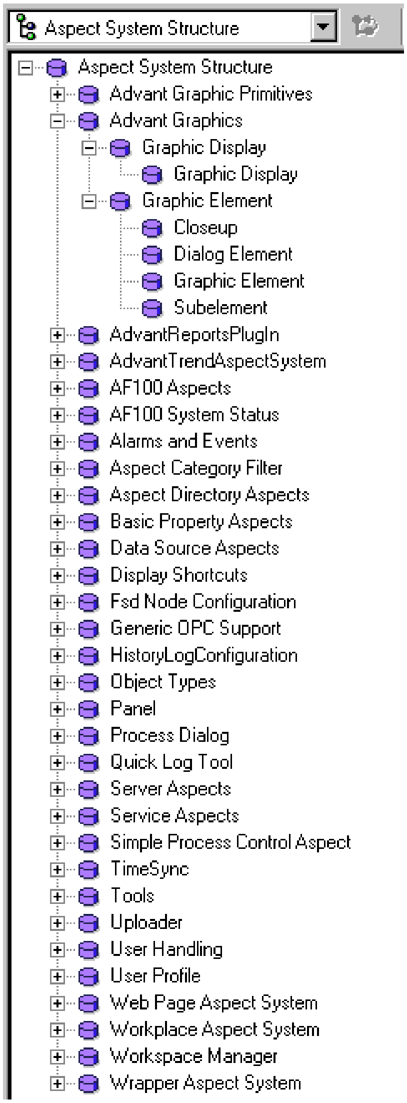
- Admininistrative Objects
  - Domains
    - Advant System
    - Default Domain
  - Inventory Object
    - Affinity
    - AfwAdminUser
    - AfwAdminUserGroup
    - AfwAdminUserPrivilege
      - Application Engineer Privilege
      - Operator Privilege
      - Software Developer Privilege
      - System Engineer Privilege
      - System Extensions Enable
    - Aspect Category
    - Aspect System
    - Aspect Type
    - Domain
    - ImplBind
    - Key
    - Node
    - Node Group
    - Operation
    - Permission
    - Priority
    - Service
    - Service Group
    - Service Provider

Figure A-1. Admin structure

A.1.2 Aspect System Structure

The *Aspect System Structure* defines the aspect systems, aspect types and aspect categories that are available in a system. The structure shows the aspect systems, the corresponding aspect types, and under the aspect types their categories. The structure is primarily used to populate the New Aspect dialog used by the Plant

Explorer and other tools. See Figure A-2. The structure is typically updated by loading aspect system definitions (using add files).



Aspect System Structure

- Aspect System Structure
  - Advant Graphic Primitives
  - Advant Graphics
    - Graphic Display
      - Graphic Display
    - Graphic Element
      - Closeup
      - Dialog Element
      - Graphic Element
      - Subelement
  - AdvantReportsPlugIn
  - AdvantTrendAspectSystem
  - AF100 Aspects
  - AF100 System Status
  - Alarms and Events
  - Aspect Category Filter
  - Aspect Directory Aspects
  - Basic Property Aspects
  - Data Source Aspects
  - Display Shortcuts
  - Fsd Node Configuration
  - Generic OPC Support
  - HistoryLogConfiguration
  - Object Types
  - Panel
  - Process Dialog
  - Quick Log Tool
  - Server Aspects
  - Service Aspects
  - Simple Process Control Aspect
  - TimeSync
  - Tools
  - Uploader
  - User Handling
  - User Profile
  - Web Page Aspect System
  - Workplace Aspect System
  - Workspace Manager
  - Wrapper Aspect System

Figure A-2. Aspect System structure

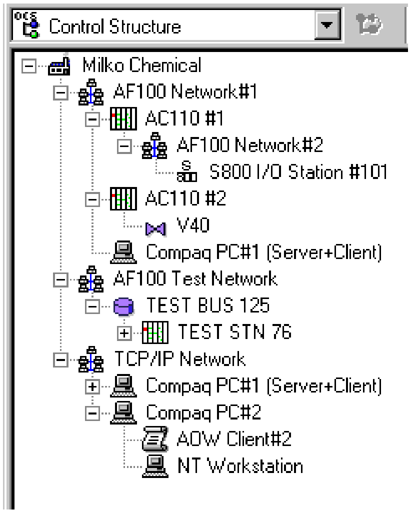
A.1.3 Control Structure

The *Control Structure* contains the networks and nodes that are used to control the process, i.e. the equipment of the Advant system.

The *Control Structure* is used to organize the process control environment in the system. This structure contains control networks, controllers, stations, different types of sub-objects (like I/O boards and process objects, and signals that are assigned to different objects within this structure).

The *Control Structure* is the base for the control operation of the system. In this structure the user can, for example, check consistency and system status.

The *Control Structure* is initialized without any objects. But the figure below gives an example of how the structure could look. See Figure A-3.



Control Structure

- Milko Chemical
  - AF100 Network#1
    - AC110 #1
      - AF100 Network#2
        - S800 I/O Station #101
    - AC110 #2
      - V40
    - Compaq PC#1 (Server+Client)
  - AF100 Test Network
    - TEST BUS 125
      - TEST STN 76
  - TCP/IP Network
    - Compaq PC#1 (Server+Client)
    - Compaq PC#2
      - AOW Client#2
      - NT Workstation

Figure A-3. Control structure

A.1.4 Functional Structure

The *Functional Structure* is used to describe the functions of an installation site, for example, a plant. This structure is primarily built by the customer as he knows the structure of his site.

The *Functional Structure* is initialized without any objects.

The figure below gives an example of how the Functional structure could look when objects have been added. See Figure A-4.

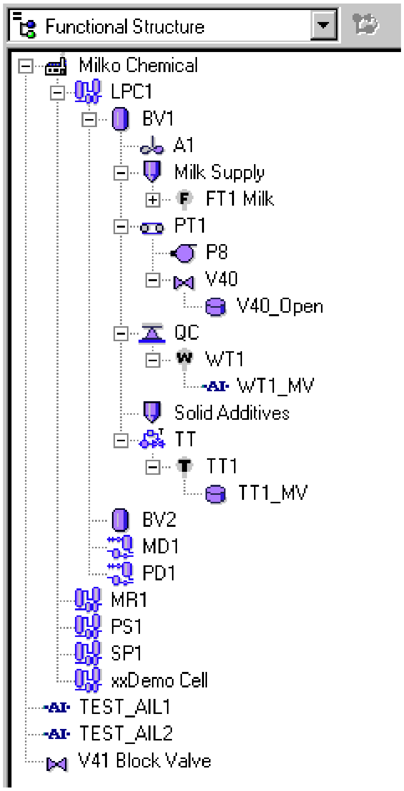


Figure A-4. Functional structure

A.1.5 Graphics Structure

The *Graphics Structure* holds the graphic primitives and subelements available in the system. This structure is reflected in the Tools dialog in the Advant Graphics Builder, and also in the corresponding wizard page. Each object in the structure is listed in the Tools dialog and also has a corresponding toolbox tab in the Graphics Builder.

The structure is updated when subelements are created or modified, or when new primitives are loaded or unloaded.

At system startup, the structure contains one root object, *Advant Graphics Tools.* The root object then holds four objects, one holding the subelements, one holding the basic primitives, one holding the aspect link and one holding process-related primitives. See Figure A-5. The user can create additional objects below the root object to hold new primitives and subelements.

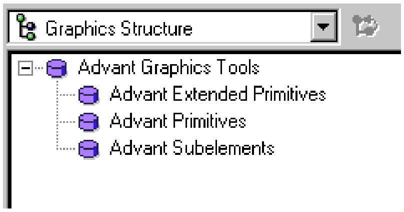


Figure A-5. Graphics structure

A.1.6 Library Structure

The Library Structure holds the alarm and event list configurations. These configurations can be common to a number of lists, and define the layout and filter parameters of the list. Each object must contain one and only one configuration.

The configurations are listed in the config view of the Alarm and Event List aspect category.

At system startup, the structure contains one root object, *Alarm and Event List Configurations.* The root object then holds four objects, Default Alarm Line, Default Alarm List, Default Event List and Default Logger Config.

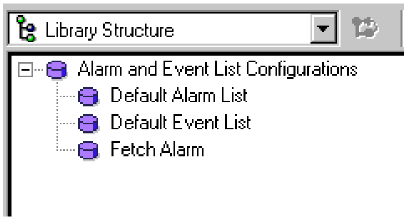
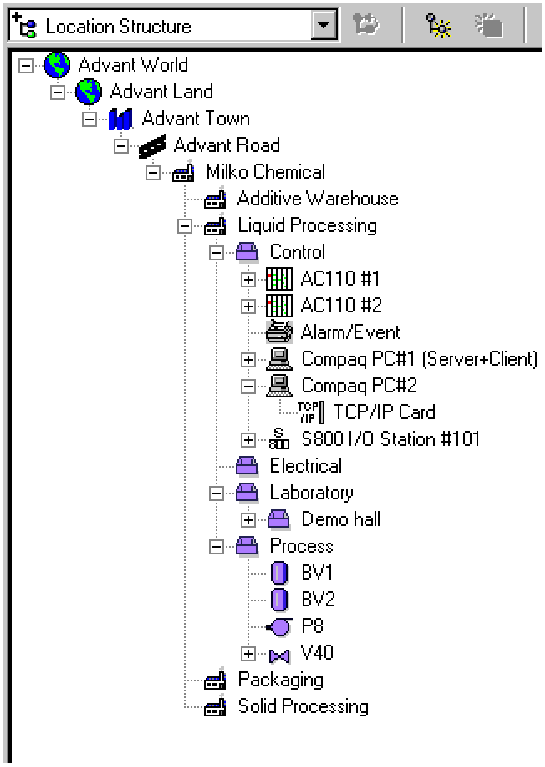

Library Structure
Alarm and Event List Configurations
Default Alarm List
Default Event List
Fetch Alarm

Figure A-6. Library structure

A.1.7 Location Structure

The *Location Structure* is supplied to help the user identify the geography or location of the objects in the plant. This structure must be built by the customer as only he has the knowledge of what buildings, rooms and locations that exist in the site.

At system start-up this structure contains no objects. The figure below gives an example of how the structure could look when containing objects. See Figure A-7.



- Advant World
  - Advant Land
    - Advant Town
      - Advant Road
        - Milko Chemical
          - Additive Warehouse
          - Liquid Processing
            - Control
              - AC110 #1
              - AC110 #2
              - Alarm/Event
              - Compaq PC#1 (Server+Client)
              - Compaq PC#2
                - TCP/IP Card
              - S800 I/O Station #101
            - Electrical
            - Laboratory
              - Demo hall
            - Process
              - BV1
              - BV2
              - P8
              - V40
          - Packaging
          - Solid Processing

Figure A-7. Location structure

A.1.8 Node Administration Structure

The *Node Administration Structure* is similar to the *Control Structure*, but this structure is used for administration purposes. The main reason for this structure is that all nodes in the system must be found in at least one place and that nodes can be placed in multiple groups.

The structure contains two levels under the root: The first level contains node groups and the second level contains nodes.

The node group *All Nodes* has prebuilt support that disallows manual changes and updates automatically with all nodes in the system.

The nodes found in the *Node Administration Structure* are typically also found in the *Control Structure*. See Figure A-8.

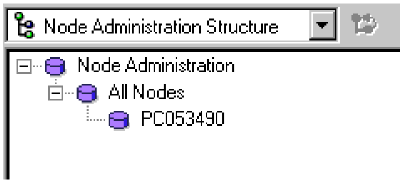
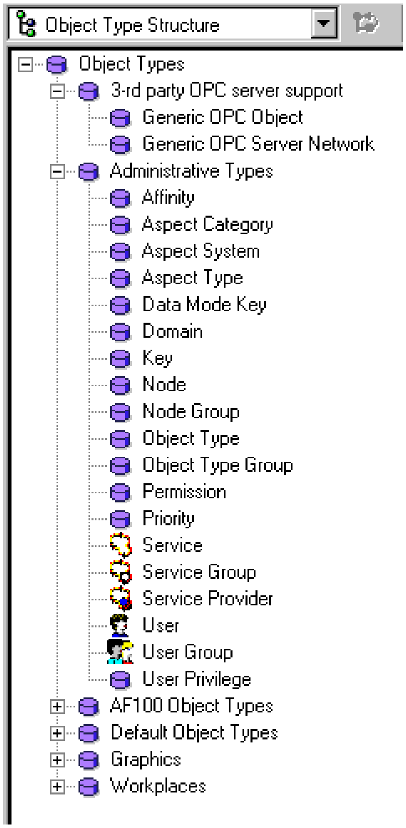


Figure A-8. Node Administration structure

A.1.9 Object Type Structure

The *Object Type Structure* is used to organize the object types defined in the system. Object types allow easy creation and identification of objects. The user can, for example, create an *AI Process Object* and then get a set of aspects and substructures automatically.

The *Object Type Structure* contains Object Type objects or untyped objects. The untyped objects can be inserted to sort and group different object types. See Figure A-9.



Object Type Structure

- Object Types
  - 3-rd party OPC server support
    - Generic OPC Object
    - Generic OPC Server Network
  - Administrative Types
    - Affinity
    - Aspect Category
    - Aspect System
    - Aspect Type
    - Data Mode Key
    - Domain
    - Key
    - Node
    - Node Group
    - Object Type
    - Object Type Group
    - Permission
    - Priority
    - Service
    - Service Group
    - Service Provider
    - User
    - User Group
    - User Privilege
  - AF100 Object Types
  - Default Object Types
  - Graphics
  - Workplaces

Figure A-9. Object Type structure

A.1.10 Service Structure

The *Service Structure* holds the services, their groups and providers, and the relations between these defined in a system. A service is a global function in the network, and the objects and aspects in the *Service Structure* control the definition and deployment of the services. See Figure A-10.

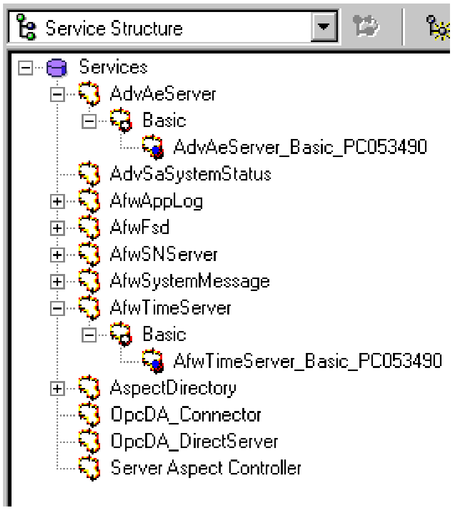


Figure A-10. Service structure

A.1.11 User Structure

The *User Structure* holds the defined users and user groups that are allowed to work in the Advant system.

All Advant users must have a related Windows NT user account. The Advant user aspect primarily contains information about a user and what the user is allowed to do within the Advant system. It also contains data specific to the user, such as profile configuration values. The structure contains two levels under the root object: The first level holds groups, and the second holds users. The user group *Everyone* holds all users. Users can be added to groups by dragging and placing them into different user groups.

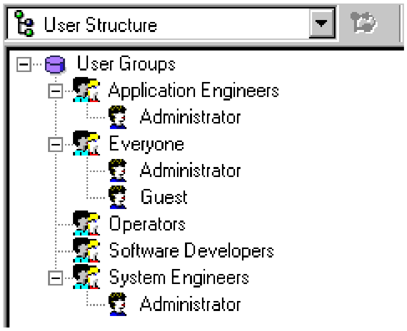


Figure A-11. User structure

Only users and user groups objects can be placed in this structure. See Figure A-11.

A.1.12 Workplace Structure

The *Workplace Structure* holds the workplace objects defined in a system. The structure is used by the users to organize the workplaces that are in use. A workplace lower in the structure inherits definitions from higher level workplaces.

Only workplace objects are allowed in this structure. The types of aspect that can be placed here are numerous, and they control the layout and function of a workplace, for example tool bars and menu items. See Figure A-12.

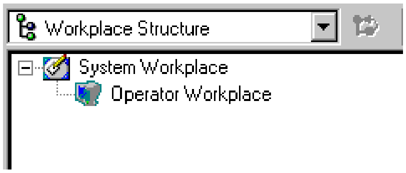


Figure A-12. Workplace structure

Appendix B Default Settings for Aspect Categories

B.1 Introduction

Below follows a table describing the default Aspect Systems delivered with the Advant system.

On each aspect category the user can perform different operations. Depending on the operation, different privileges are required to perform them. The operations that can be performed are:

- View
- Modify
- Create
- Config View

The abbreviations, found in the table, for the different user privileges are explained below:

- ApplEng = Application Engineer
- Op = Operator
- SysEng = System Engineer
- SoftDev = Software Developer

How to read the table

The first aspect category in the table is a **Graphic Primitive**. Everybody can *view* the Graphic Primitive category, but if you want to *create* a new Primitive or *modify* an existing, you have to have the Application Engineer privilege.

Table B-1. Default Aspect Systems

Aspect System	Aspect Type	Aspect Category	Description	View	Modify	Create	Config View
Advant Graphic Primitives	Advant Graphic Primitives	Graphic Primitive			ApplEng	ApplEng	
Advant Graphics	Graphic Display	Graphic Display			ApplEng	ApplEng	
Advant Graphics	Graphic Element	Closeup			ApplEng	ApplEng	
Advant Graphics	Graphic Element	Dialog Element		Op	ApplEng	ApplEng	
Advant Graphics	Graphic Element	Graphic Element			ApplEng	ApplEng	
Advant Graphics	Graphic Element	Subelement			ApplEng	ApplEng	
Advant Reports Plug In	Advant Reports	Advant Reports			ApplEng	ApplEng	ApplEng
AdvantTrendAspectSystem	AdvantTrend Display	AdvantTrend Display				ApplEng	ApplEng
AF100 Aspects	AdvDsAF100 AIS	AF100 AIS PCA	Aspect category of AF100 analog input		ApplEng	ApplEng	ApplEng
AF100 Aspects	AdvDsAF100 AOS	AF100 AOS PCA	Aspect category of AF100 analog output		ApplEng	ApplEng	ApplEng

Table B-1. Default Aspect Systems

Aspect System	Aspect Type	Aspect Category	Description	View	Modify	Create	Config View
AF100 Aspects	AdvDsAF100 DAT_AI	AF100 DAT_AI PCA	Aspect category of AF100 DAT_AI		ApplEng	ApplEng	ApplEng
AF100 Aspects	AdvDsAF100 DAT_AO	AF100 DAT_AO PCA	Aspect category of AF100 DAT_AO		ApplEng	ApplEng	ApplEng
AF100 Aspects	AdvDsAF100 DAT_DI	AF100 DAT_DI PCA	Aspect category of AF100 DAT_DI		ApplEng	ApplEng	ApplEng
AF100 Aspects	AdvDsAF100 DAT_DO	AF100 DAT_DO PCA	Aspect category of AF100 DAT_DO		ApplEng	ApplEng	ApplEng
AF100 Aspects	AdvDsAF100 DATx	AF100 DATx PCA	Aspect category of AF100 DATx		ApplEng	ApplEng	ApplEng
AF100 Aspects	AdvDsAF100 DIS	AF100 DIS PCA	Aspect category of AF100 digital input		ApplEng	ApplEng	ApplEng
AF100 Aspects	AdvDsAF100 DOS	AF100 DOS PCA	Aspect category of AF100 digital output		ApplEng	ApplEng	ApplEng
AF100 Aspects	AdvDsAF100 MB	AF100 MB PCA	Aspect category of AF100 MB		ApplEng	ApplEng	ApplEng
AF100 Aspects	AdvDsAF100 MBS	AF100 MBS PCA	Aspect category of AF100 MBS		ApplEng	ApplEng	ApplEng
AF100 Aspects	AdvDsAF100 MI_MIL	AF100 MI PCA	Aspect category of AF100 MI		ApplEng	ApplEng	ApplEng

Table B-1. Default Aspect Systems

Aspect System	Aspect Type	Aspect Category	Description	View	Modify	Create	Config View
AF100 Aspects	AdvDsAF100 MI_MIL	AF100 MIL PCA	Aspect category of AF100 MIL		ApplEng	ApplEng	ApplEng
AF100 Aspects	AdvDsAF100 MR	AF100 MR PCA	Aspect category of AF100 MR		ApplEng	ApplEng	ApplEng
AF100 System Status	AF100 System Status	AF100 System Status	AF100 System Status for AdvantPro release 1			ApplEng	ApplEng
AlarmEventAspectSystem	Acknowledge Indication	AckIndicationIcon		ApplEng	ApplEng	ApplEng	ApplEng
AlarmEventAspectSystem	AlarmIndication	AlarmIndicationIcon		ApplEng	ApplEng	ApplEng	ApplEng
AlarmEventAspectSystem	AlarmList	AlarmCategory			ApplEng	ApplEng	ApplEng
AlarmEventAspectSystem	AlarmLogger AspectType	AlarmLogger Category		ApplEng	ApplEng	ApplEng	ApplEng
AlarmEventAspectSystem	EventList	EventCategory			ApplEng	ApplEng	ApplEng
AlmConfigAspect	AeAlarmConfig	BasicAlarmConfiguration		ApplEng		ApplEng	ApplEng
Aspect Category Filter	AfwAspectCategoryFilter	Aspect Category Filter					

Table B-1. Default Aspect Systems

Aspect System	Aspect Type	Aspect Category	Description	View	Modify	Create	Config View
Aspect Directory Aspects	Aspect Category	Aspect Category Definition	The base Aspect Category category		SysEng	SoftDev	
Aspect Directory Aspects	Aspect System	Aspect System Definition	The Aspect System Aspect Category.		SysEng	SoftDev	
Aspect Directory Aspects	Aspect Type	Aspect Type Definition	The base Aspect Type category		SysEng	SoftDev	
Aspect Directory Aspects	Domain	Domain Definition			SysEng	SoftDev	
Aspect Directory Aspects	ImplBind	ImplBind Definition	The base ImplBind category		SysEng	SoftDev	
Aspect Directory Aspects	Key	Data Class Key Definition			SysEng	SoftDev	
Aspect Directory Aspects	Key	Key Definition	The Aspect Category that defines the definition of an key.			SysEng	
Aspect Directory Aspects	Operation	Operation Definition	The base Operation category		SysEng	SoftDev	

Table B-1. Default Aspect Systems

Aspect System	Aspect Type	Aspect Category	Description	View	Modify	Create	Config View
Aspect Directory Aspects	Priority	Priority Definition			SysEng	SysEng	
Basic Property Aspects	Basic Property Icon	Aspect Icon	The aspect icon aspecet category.		ApplEng	ApplEng	
Basic Property Aspects	Basic Property Icon	Object Icon	The Object icon aspect category.		ApplEng	ApplEng	
Basic Property Aspects	Basic Property Name	Aspect Name		ApplEng			
Basic Property Aspects	Basic Property Name	Name	The primary name. Used for all system objects.				
Basic Property Aspects	Basic Property Name	PCA Upload Type		ApplEng	ApplEng	ApplEng	ApplEng
Basic Property Aspects	Basic Property Name	Type Name	The name used to name object types.		SysEng	SoftDev	
Basic Property Aspects	Basic Property Properties	General Properties			ApplEng	ApplEng	ApplEng
Basic Property Aspects	Basic Property Structure	Admin Structure	The structure used for configuration data	SysEng	SysEng	SysEng	

Table B-1. Default Aspect Systems

Aspect System	Aspect Type	Aspect Category	Description	View	Modify	Create	Config View
Basic Property Aspects	Basic Property Structure	Aspect System Structure	The structure that holds all registered Aspect Systems.	ApplEng			
Basic Property Aspects	Basic Property Structure	Control Structure	The structure used to describe the automation network		SysEng	SysEng	
Basic Property Aspects	Basic Property Structure	Functional Structure			ApplEng	ApplEng	
Basic Property Aspects	Basic Property Structure	Graphics Structure		ApplEng	ApplEng	ApplEng	ApplEng
Basic Property Aspects	Basic Property Structure	Location Structure	The structure used to describe geographic layouts		ApplEng	ApplEng	
Basic Property Aspects	Basic Property Structure	Node Administration Structure	Hold the nodes and node groups in the system.	SysEng	SysEng	SysEng	
Basic Property Aspects	Basic Property Structure	Object Type Structure	The structure used to hold object types.	ApplEng	ApplEng	ApplEng	

Table B-1. Default Aspect Systems

Aspect System	Aspect Type	Aspect Category	Description	View	Modify	Create	Config View
Basic Property Aspects	Basic Property Structure	Service Structure	The structure used to hold service definitions.	SysEng	SysEng	SysEng	
Basic Property Aspects	Basic Property Structure	System Structure		SoftDev	SoftDev	SoftDev	
Basic Property Aspects	Basic Property Structure	User Structure	This structure holds all Advant Users and UserGroups		SysEng	SysEng	
Basic Property Aspects	Basic Property Structure	Workplace Structure	This structure holds all workplace definitions	ApplEng	ApplEng	ApplEng	ApplEng
Data Source Aspects	Adapter Data Source	Adapter Data Source Definition		ApplEng	SysEng	SysEng	SysEng
Data Source Aspects	OPC Data Source	OPC Data Source Definition		ApplEng	SysEng	SysEng	SysEng
Display Shortcuts	Display Shortcuts	Application Bar Shortcuts	Used in the workplace structure for the application bar.		ApplEng	ApplEng	ApplEng

Table B-1. Default Aspect Systems

Aspect System	Aspect Type	Aspect Category	Description	View	Modify	Create	Config View
Display Shortcuts	Display Shortcuts	Shortcuts	Can be used in all structures but the workplace structure.		ApplEng	ApplEng	ApplEng
Fsd Node Configuration	Fsd Node Configuration	Fsd Node Configuration			SysEng	SysEng	SysEng
Generic OPC Support	GenericOpcAspect	GenericOpc Aspect	Generic Implementation of PCA for OPC Servers.		ApplEng	ApplEng	ApplEng
HistoryLogConfiguration	BuilderView	LogConfiguration		ApplEng	ApplEng	ApplEng	ApplEng
Object Types	Object Factory	Object Factory		ApplEng	ApplEng	ApplEng	ApplEng
Object Types	Object Factory	Object Type Definition				ApplEng	
Object Types	Object Type	Object Type				SoftDev	
Process Dialog	Process Dialog	Process Dialog	Process Dialog Aspect Category		ApplEng	ApplEng	ApplEng
Quick Log Tool	Quick Log Tool	Quick Log Tool					
Server Aspects	SAC Data Source	SAC Data Source				SysEng	

Table B-1. Default Aspect Systems

Aspect System	Aspect Type	Aspect Category	Description	View	Modify	Create	Config View
Service Aspects	Affinity	Affinity Definition			SysEng	SoftDev	
Service Aspects	Node Group	Node Group Definition			SysEng	SoftDev	SysEng
Service Aspects	Node	Node Definition			SysEng	SoftDev	SysEng
Service Aspects	Service Group	Service Group Definition			SysEng	SoftDev	SysEng
Service Aspects	Service Provider	Service Provider Definition			SysEng	SoftDev	SysEng
Service Aspects	Service	Service Definition			SysEng	SoftDev	SysEng
TimeSync	TimeServerHandler	TimeServerHandler		ApplEng	SysEng	SysEng	SysEng
Tools	AfwPluginToolItem	ActiveX Plugin	ActiveX plugin		ApplEng	Not visible	Not visible
Tools	AfwScriptToolItem	VB Script Tool Item	VB Script tool		ApplEng	Not visible	not visible
Tools	AfwToolCollection	Menu Collection	Collection of tools to be added into a menu		ApplEng	Not visible	Not visible

Table B-1. Default Aspect Systems

Aspect System	Aspect Type	Aspect Category	Description	View	Modify	Create	Config View
Tools	AfwToolCollection	Tool Collection	Collection of tool buttons or ToolView capable aspects		ApplEng	Not visible	Not visible
Tools	AfwVerbToolItem	Aspectverb Tool Item			ApplEng	Not visible	Not visible
Uploader	AdvDsUploader	Uploader	Aspect category of Uploader	ApplEng	ApplEng	ApplEng	ApplEng
User Handling	AfwAdminUser	User Definition			SysEng	SoftDev	SysEng
User Handling	AfwAdminUserGroup	User Group Definition			SysEng	SoftDev	SysEng
User Handling	AfwAdminUserPrivilege	User Privilege Definition			SysEng	SoftDev	SysEng
User Profile	Profile Definition	Profile Definition			SysEng	SoftDev	SysEng
User Profile	Profile Values	Profile Values				SysEng	SysEng
Web Page Aspect System	WebPageType	Web Page			ApplEng	ApplEng	ApplEng
Workplace Aspect System	Workplace Object Type	Workplace Object			ApplEng	ApplEng	ApplEng

Table B-1. Default Aspect Systems

Aspect System	Aspect Type	Aspect Category	Description	View	Modify	Create	Config View
Workspace Manager	Workspace Manager Bars	Application Bar			ApplEng	ApplEng	ApplEng
Workspace Manager	Workspace Manager Bars	Status Bar			ApplEng	ApplEng	ApplEng
Wrapper Aspect System	ActiveX Wrapper	ActiveX Wrapper			ApplEng	ApplEng	ApplEng
Wrapper Aspect System	Windows Application	Windows Application			ApplEng	ApplEng	ApplEng

INDEX

A

ABB Object
  see Object 21
Aspect 55
  Aspect Details 57
  Categories 55
  Copy 56, 65
  Create 63
  Cut 56
  Delete 56
  Edit 65
  New 56, 63
  Override 56
  Paste 56
  Privilege Mapping 57
  Property dialog 57
  Rename 56
  Views 78
Aspect Filters 18
  Configure 18
Aspect Systems B-105
  Default B-105

B

Buttons
  Aspect Filter Configuration 26
  Find Tool 26
  Message Window 27
  New Aspect 26
  New Object 25
  Preview Toggle 25
  Temporary Root up 25

C

Configuration 15
Context Menus
  Aspect 56
  Object Tree 27

F

Find Tool
  Search 80
  Using 80

I

Installation 13

L

Lists
  Aspect Filter List 26
  Aspect List 26

M

Maintenance 89
  Preventive 89
Menu
  File Menu 24
  Help Menu 25
  Tools Menu 24
  View Menu 24
  Window Menu 25

O

Object 20
  Advanced 33
  Advant Object 21
  Composite 21
  Copy 40
  Create 33
  Cut 40
  Delete 41
  List Presentation 33
  Move 40
  Names 30

- New 33
- Paste 40
- Place 38
- Placing 38
- Property dialog 30
- Show All 33
- Simple 21
- Tree View Window 21
- Uniqness 30

Object Type
- Create 41
- Default Icon 33
- New 41
- Object Type Name 33

Operation
- Modify B-105

Operations
- Config View B-105
- Create B-105
- View B-105

S

Start up 16

Structures 65
- Admin Structure A-92
- Aspect System Structure A-93
- Browse 74
- Control Structure A-95
- Create 66
- Functional Structure A-96
- General A-91
- Graphics Structure A-97
- Location Structure A-98
- New 66
- Node Administration Structure A-99
- Object Type Structure A-100
- Service Structure A-101
- Temporary Root 76
- User Structure A-102
- Workplace Structure A-103

U

User Interface 15
- Drag and Drop 5
- Mouse 5
- Preview Area 26
- Structure Selector 25
- Temporary Root 25

User Privileges
- Application Engineer B-105
- Operator B-105
- Software Developer B-105
- System Engineer B-105

User Profiles 16